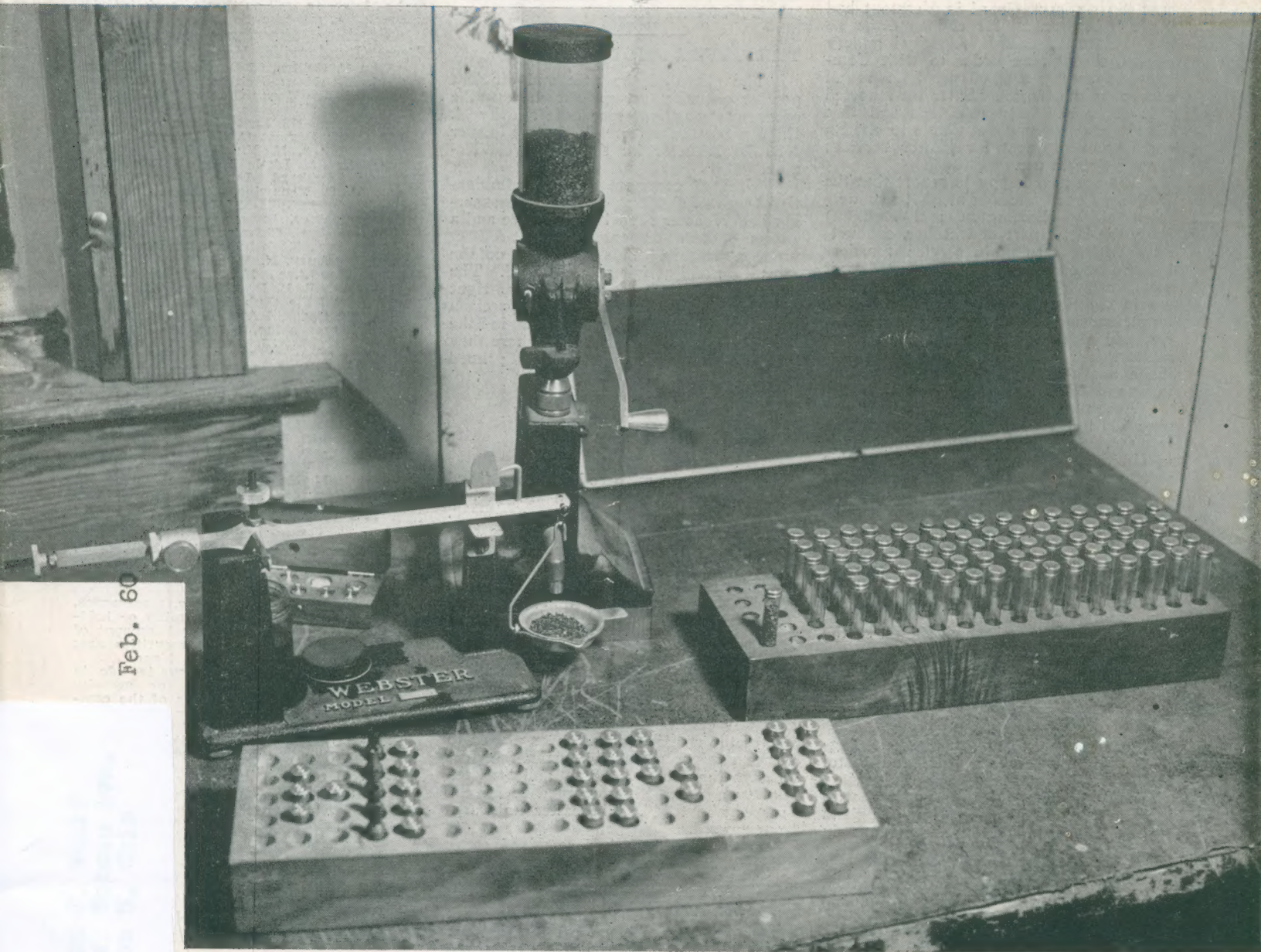


Precision SHOOTING

November 1959

Vol. 5, No. 7

35 cents



Feb. 60

A NEAT, EFFICIENT POWDER CHARGING SET-UP

(See page 2)

a magazine for Shooters by Shooters

Precision Shooting is published monthly by Precision Shooting, Inc.

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A NATIONAL GUARD PUBLIC SERVICE

In the January 1959 issue we reported that the National Guard in Vermont had made it impractical for civilian clubs to use National Guard Armory gallery ranges, through an order to Unit Commanders setting a \$5.00 per hour rental charge on the ranges. Later we reported that order had been rescinded and that the ranges were made available to civilian clubs upon payment for janitor services for the time in use.

We are now happy to report that the National Guard Units in at least two Vermont cities (Burlington and Rutland) have, the latter part of October, conducted a FREE zeroing in service for deer hunters on one Sunday. The Guard Unit members supplied assistance to the hunters in sighting in their rifles, provided target service, "spotting" for the shooters, and aided in correcting any minor faults in the rifles. Hot coffee was also made available at each range. Sighting in was at 100 yards range.

According to newspaper reports, well over 100 hunters took advantage of this free service at the Burlington Units' range in Underhill, Vt. We presume that this worthwhile service was well received in the Rutland area for it is, to our knowledge, the first time such a group service to hunters has been available in Vermont.

This is excellent Public Relations work by the Guard. We hope it indicates a return of the pleasant, friendly co-operation between National Guard and civilian shooters which has prevailed in the past in Vermont, and which should be the case everywhere.

P. H. T.

NEW ENGLAND ORGANIZATION MEETING

The annual meeting of the New England Congress of State Rifle and Pistol Associations was held in Manchester, New Hampshire, November 1st, with delegates from all six New England States Rifle and Pistol Associations in attendance.

George Steeg, New Hampshire, was elected President of the area organization, and George Grant, Westbrook, Maine, Vice President. E. H. "Bud" Ebdon, Jr., Wallingford, Conn. was re-elected Secretary-Treasurer.

The program for New England Championship competition between gallery rifle teams from the six states will be continued, and a similar program for gallery pistol teams was approved. In these programs each state association conducts a preliminary competition to select, by the Lewis classification system, teams to represent the state in "A," "B" and "C" classes. The teams from all the

states meet on a central range for a shoulder-to-shoulder Championship shoot-off. The 1960 rifle championship shoot will be held on the range of the Piscataqua Rifle Club in Portsmouth, N. H., and the tentative location for the pistol championship is either Concord or Manchester, N. H.

"RUSS" LENT LEAVES CONNECTICUT

J. Russell Lent, long-time secretary of the Connecticut Rifle and Revolver Association, has recently resigned from that office and is presently working for the Arthur Cook Company in Laurel, Maryland.

The headquarters of the Connecticut Rifle and Revolver Association is still in Middlefield, Conn., and well known Mrs. Helen Fowler, who has worked with Russ Lent for years, is carrying on as acting secretary and editor of the Association's monthly news bulletin, THE CONNECTICUT MARKSMAN.

THE COVER PHOTO

The photo of the neat and efficient powder charging set-up shown on the cover was supplied some time ago by K. E. Smith, Lakeside, Calif., a former NBRSA Director for the Southwest Region.

"Smitty" comments: "The combination I use in charging or powder measuring is a Webster Model AR balance and a Brown & Ball dispenser plus SAECO powder measure. This seems to do the job nicely and at fair rate of speed. The plastic tubes in the loading block on right are containers salvaged from precision grade taps. They are charged in the shop and carried to the range, where they are dumped directly into the primed cases."

A LIGHTER WOOD FOR RIFLE STOCKS

by F. L. Magoon

In recent years there has been a trend toward rifles with minimum weight and many featherweights have been produced. These featherweights generally have barrels of very small diameters and skimpy stocks that greatly limit the accuracy possibilities. There is a need for a wood suitable for rifle stocks that is lighter than walnut.

Early this year I secured a blank of Yama wood to use in some experiments. The blank was oversize for normal use and I cut a 1/2" slab from the side of the blank to use for checking purposes. This slab was carefully planed to 1/2" and one side of the remaining blank was planed to a true straight surface. During the next 60 days the slab warped and twisted slightly and the blank warped to have a bow of about 1/4". Thereafter no warping occurred.

After the blank had remained static for some time I sent it to Reinhart Fajen and had it machine inletted and turned to the Marksman type, which is really a fair sporter type. I also had a walnut stock of the same type on hand. When the Yama stock was returned I compared weights and found that the Yama stock weighed two pounds and four ounces while the identical stock in walnut weighed two pounds and twelve ounces.

To test the relative strength of the Walnut and Yama woods I prepared strips of 1/2" X 1" X 6" of both the Yama and Walnut and stressed these under identical conditions to the breaking point. The Yama wood required almost 100%

STATEMENT OF OWNERSHIP

Statement required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of

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1. The names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher—Precision Shooting Inc., 64 Depot St., Lyndonville, Vermont

Editor—P. H. Teachout, 64 Depot St., Lyndonville, Vt.

Managing Editor—None

Business Manager—P. H. Teachout, 64 Depot St., Lyndonville, Vt.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

Precision Shooting Inc., 64 Depot Street, Lyndonville, Vermont

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None

4. Paragraphs 2 and 3 above include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

signed P. H. Teachout, Editor

Sworn to and subscribed before me this 28th day of September 1959.

S. R. Lang, Notary Public

more stress to break it than did the walnut.

The Yama blank I have is of the fancy grade. It is now a finished stock which appears to be fully stable. It is the most colorful stock I have ever seen. In some respects the finished stock resembles maple but has much more color and a much wider variety of figure. The Yama wood is very hard and checkers

nicely. It is very close grained and while there is a definite grain running the length of the stock, examination under magnification shows what appears to be an interwoven cross grain. This possibly accounts for the unusual strength of the wood.

The blank I have was purchased from the Redwood Spruce Lumber Company, 15138 Martha Street, Van Nuys, California.

YAMA WOOD FOR GUNSTOCKS

In F. L. Magoon's report on the use of Yama wood for rifle stocks he mentioned that he secured his stock wood from Redwood Spruce Lumber Company in California. We are now advised that the Redwood Spruce Lumber Company is no longer selling this wood, but that stock blanks in various grades of "figure" may be obtained from Pacific World Imports, Inc., 16033 Ventura Blvd., Encino, California.

AN OPEN LETTER

Dear Phil:

This, I hope, will be another Open Letter to the Editor. I can imagine that enough of these can be tiring, but I believe that continued reading will justify its purpose.

I made a promise, to you and Ray Biehler, to work on the Co-operative Team Testing idea. And, too, I have followed suggestions, from various sources, on the initial 'mock-up' for organizing. However, while I've kept my promise and have followed the advice of others, I haven't made public the thoughts of others and my own regarding the Testing idea.

As on radio and TV, I should like to have equal time for presenting another proposal for Team Testing.

As you will remember, Phil, I have believed that there is no need for duplicate organization. It has always been my thought that the NBRSA was set up for this purpose and, too, that it was qualified and able to perform this service. I still believe this.

Let us read the objectives of the NBRSA:

1) The development and encouragement of extreme accuracy in rifles, ammunition, equipment, and shooting methods.

2) To standardize on a national basis the entire Bench Rest Shooting program, so that targets, ranges, scoring methods, records and match procedure will be uniform and comparable.

3) To assist and encourage any individual or organization in the promotion of Bench Rest Shooting.

4) To gather and make available to its members pertinent statistics and technical data. (With different re-wording, this says the same thing as does the Co-operative Team Testing proposal.)

Let's take it item by item. 1) The testing and experiment of the Team Testing organization parallels the development and encouragement of extreme accuracy in rifles, ammunition, equipment, and shooting methods.

2. A form of standardization of ranges, targets, scoring methods, records and match procedure by the Team Testing, for purposes of 'recording and collecting, analysis, and evaluation', can only equal that of the NBRSA.

3) Be it dues paying member of the NBRSA or individual experimenter and tester, the same feeling of co-operation and a will to help is the same. Another

way of saying: To assist and encourage any individual or organization in the promotion of Bench Rest Shooting.

4) . . . disseminate information regarding: Old and New theories; Techniques; Equipment; Components; Ballistical Values; and, Standards of Comparison. How else can it be written to mean: 'To gather and make available to its members pertinent statistics and technical data'?

In short, Phil, I think that we're trying to do and say the same thing twice.

Actually, I think it is time for the officers and members of the NBRSA to re-examine the purposes and intents of its organization and to decide whether they are living up to these ideals. Whether they want to continue these purposes and intents and put them into being. Or, whether they would rather put these purposes and intents aside and pursue a purely competitive course that is not too informative.

I believe that Team Testing can be added to the organization of the NBRSA. I should have said 'recognized by.' And, too, that an additional office and a broadened program should be created and put into activity.

The NBRSA is old enough and big enough to live up to its word. It CAN provide this field of activity and, thereby, carry out the original intents and purposes of its organization—if it so desires.

The organization and officials of the Team Testing are little different than the set-up of the NBRSA; except for a Test Control Committee and a secretary to carry out its tasks—a "work-horse."

All in all, it is a matter of one body and two heads. The one head isn't needed and the other should be put to work.

I don't know the method of presenting a resolution to the Directors or the membership, even tho' I am a member, embodying this recognition of its intents and purposes and an implementation of the necessary office, duties and methods for their 'intents and purposes' performance, but I would like to see, or offer such a resolution. Perhaps you can help me on this score?

Different individuals have asked me, "Why TEAM?" I can only answer from the experiences of others and my own. In order to make valid tests and reports, you must make notations of cadence (timing); wind; temperature; humidity and light conditions; and, in some instances, have a pit crew and/or a 'spotter.' In all fairness to yourself and in making a good test, one person cannot do this by himself and do a good job. And, too, the old saying that 'two heads are better than one' more than applies to this operation.

The question of dual organization has been answered, but I do think that a "work-horse" should be created and, thereby, relieve the office of Sec'y-Treas. of the organization.

Answers to the original Team Testing Proposal have shown me that qualified experimenters and testers (shooters), that equipment and component manufacturers, and, that academic men, such as Physicists, Engineers, and Technicians are interested and should form the Control Committee. They should control, analyze and evaluate the tests and experiments. Their works and results should be co-ordinated by/through a secretary, of sorts, to the parent organization.

Techniques and methods of manufacture, methods of shooting, trial of ideas and theories, component assembly, gun 'tuning,' and all such items could be handled by an Information Form that would be used on a voluntary basis in

competitive shooting. Notation space could be provided to show whether such information should be held confidential, or not. Such forms would be a matter of fact for testing/experimental operations.

Costs and dues would be proportionally lower because of the elimination of dual organization and operations.

Sincerely yours,

Preston J. Hogue, Sr.
13713 Rosedale Ave.
Southgate, Michigan

(Comment by P. H. T.: Pres' Hogue is a dues paying member of the NBRSA. I do recommend that other NBRSA members give his proposal some serious consideration and that they advise the NBRSA Director for their own Region whether or not they consider his proposal practical and desirable. The Directors' names and addresses are published each month.

Membership-wise, the total dues-paying members of the NBRSA number very slightly over 700 and that membership has never reached a total of 1,000. This may be the smallest membership of any national shooting organization in the United States. But the accomplishments of NBRSA members in the improvement of rifle accuracy, and proving them in open competition, are known wherever there are rifle shooters, and have had a profound influence in the design and assembly of rifles, and ammunition components, in recent years. The dual accomplishments of NBRSA members (experimenting and proving in competition) has been "news" in the rifle shooting world and has given the NBRSA prestige that is all out of proportion to its membership numbers.

I fully believe that the present NBRSA prestige has been gained, very largely, through a combination of three factors: The experimenting and trial of ideas to improve rifle and ammunition accuracy, and of contributing accessories; the NBRSA nationally standardized competitive shooting program which provides the means for proving the worth of new ideas; and the publication of the shooting results and information about the new ideas in arms, ammunition and accessories in a periodical that is read by other than NBRSA members. I believe that the absence of any one of these factors would have been detrimental to the NBRSA. I believe that Pres' Hogue's proposal could in some degree strengthen all three of these factors and thereby benefit the NBRSA, its individual members, and the rifle shooting world at large.

In quite recent years there appears to be a tendency for some portion of the NBRSA membership to consider the competitive shooting program as **THE** important activity of the organization, and that the experimentation and adoption of new equipment, technique and ideas is, at best, a minor and inconsequential part of the over-all NBRSA program. As merely a dues paying member, it is this writer's opinion that if the NBRSA should degenerate into simply a competitive shooting organization that its present prestige would very soon fade and in a short time be a thing of the past. The NBRSA competitive shooting program **IS** important, but as one part of a fully rounded, forward looking program. It is my **personal opinion** that Pres' Hogue's proposal could be good for the over-all NBRSA program. Whether it may be or not is entirely dependent on the majority **expressed** opinion of all the members.)

TRIGGER PULL

By Jesse M. Grigg

Weight of pull is defined as the force which, exerted in a direction parallel with the barrel, just causes the trigger to break. Usually consisting of a weight, the force is applied to the trigger by means of an off-set rod, whose hook naturally finds the lowest level in the trigger arc. As arcs differ according to the make of the rifle, and finger pressure in firing is exerted at an angle with the stock axis, it is obvious that the weight of pull as thus determined may differ from the finger pressure which fires the rifle. For one make the finger pressure may exceed the defined weight of pull; for another it may be less.

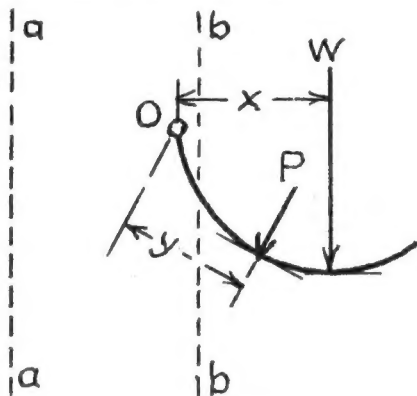


FIG. 1

In the trigger problem so many determining factors are involved that a sketch such as that shown in Fig. 1 is needed to explain how they vary with trigger design. Here the broken lines a-a and b-b denote respectively the planes of the bottom edge of the bolt and of the floor plate. O denotes the trigger pin about which the trigger turns. The arrow W denotes in weight and direction the force which equals the pull weight; it touches the inside of the curve at its lowest point because the supporting hook automatically seeks this place.

The arrow P denotes in force and direction the finger pressure which breaks the trigger in firing. The place of P is determined by fact that the finger slides along the curve, and comes to rest on a radius of curvature at the place where a line at right-angles to the finger direction is tangent to the trigger curve. In the average case the angle of the finger perhaps is about 20 degrees.

The turning moment of W about the trigger pin O equals the product Wx , the weight W for example being three pounds. The turning moment of finger pressure P is the product Py . As each of these turning moments just causes the trigger to break

$Wx = Py$; or $P = W \text{ times } x/y$, this showing that P may be greater or less than the three pound weight W, depending on the ratio of x to y.

We now have all that is needed to reveal some pertinent facts about trigger pull. First of all it is obvious that the ratio x/y will depend on the shape of the curve and its position relative to the trigger pin O. In Fig. 1 the trigger curve lies below the level of the trigger pin; but if it were about on a level with O, x would be much greater than y for any conceivable form of curve. Not only for this reason would excessive finger pressure be required, but also the finger might slide to a place where it could not as much as break the trigger. Such a

curve location is a fault; yet look through a general gun catalog and note the many triggers whose chords seem to extend straight down from the floor plate.

For x and y to be nearly equal the curve of the trigger should lie well to the rear of the trigger pin, and the curve itself should be so shaped that the finger tends naturally to slide into one proper place. The swept back curve denoted in Fig. 1 tends to have the desired characteristics, but a different curve might be still better.

We can see now why a trigger may seem heavy one time and light the next. As the finger tends to slide to the place of tangency, the place where it rests will vary according to the angle of the finger. If the hand is far up on the stock grip the angle is quite steep, y is short, and the pull seems heavy. The reverse is true if the hand is placed farther back. Thus the shooter may claim that his trigger varies when, as matter of fact, what varies is his manner of seizing the grip. The impression of heavy pull occurs also if one squeezes, not so much in the plane of the trigger, but partly sidewise. The cause perhaps of this fault is not enough of a hook in the trigger finger. A by-product of the fault is excessive disturbance of aim at trigger break.

Fig. 1 shows the pin O just inside the line b-b which denotes the floor plate. Just inside is a very common place for it, perhaps because a shorter trigger throw is possible. But this advantage is somewhat off-set by a disadvantage. A slight change in finger position may change the needed finger pressure by as much as 25 per cent, whereas this percentage would be much smaller if the trigger were pinned farther from the floor plate. Examples of high pinning are the Win. Model 70, Model 1903 Cal. .30, and the old Savage 19 NRA. In the model 70, however, this advantage is slightly off-set by placement of the trigger pin almost over the trigger curve.

The swept back curves of the Win. 52, both B and C models, are commendable. The curves of the Canjar and Thomas triggers are less favorable; but, like most of the Winchester triggers, have the advantage of being located well to the rear of their trigger pins. Having this feature, they are potentially capable of being modified with shoe or liner to bring them nearer to one's desire.

The jar imparted to a rifle before the instant of trigger break is proportional directly to the rate at which mechanical work is being done. Thus it depends directly on the weight and length and inversely on the time of pull. This is to say the slower the finger movement the less the aim will be disturbed. We see also that, other factors equal, a short pull will disturb the aim less than a long.

But the disturbance after the trigger breaks is what is likely to do the most damage to the aim. At trigger break the finger has a potential of force which in some manner must be counteracted. Perhaps this force in the finger and hand is in the nature of that in a compressed spring which expends its energy in accordance with natural laws when released.

There are two well known ways in which the finger energy is dissipated. One is the medium of a spring which permit backlash after break. The other is communication of the energy directly to the rifle itself by positive opposition to further trigger motion in a way which I like to call a stone-wall stop.

The stone-wall stop is characteristic of the micro-motion triggers. It is a

bad fault, as communication of the energy to the rifle itself unduly disturbs the aim. Owing to this fault, the trigger must be squeezed very, very carefully, this making for slowness of fire, even though conditions call for haste.

The merit of the backlash trigger depends on its resistance after break. If the resistance is less than the weight of pull, break destroys the balance of forces, and the rifle swings left or right, the direction depending in this order on whether the shooter is right- or left-handed. At the same time the dissipation of finger energy is accompanied by excessive displacement of the finger. Though the energy which is then communicated through the finger to the rifle may be almost negligible, yet the aim may be disturbed owing to this displacement and to re-arrangement of the fingers and hand on the stock.

It should not be inferred, however, that these are faults which belong to all backlash triggers. They are present only because the backlash resistance is much less than pull weight. Indeed if the backlash resistance nearly equals pull weight, or, in particular, if it is properly proportioned in relation to pull weight, the backlash type is conceivably the best of all triggers.

Possibly very few of its users suspect that the Thomas trigger is of the backlash type, yet it is this, and it comes near to being the one whose backlash resistance is properly proportioned. For this reason it is, in my opinion, vastly nearer to the ideal, than is any other of the seven different match triggers with which I have had experience.

The fine feature of the Thomas trigger is the fact that the backlash resistance takes up where the pull resistance leaves off. Thus the Thomas trigger breaks without sensible movement; yet if still greater than break pressure is applied it continues to move. In practice this movement is imperceptible, and the fea-

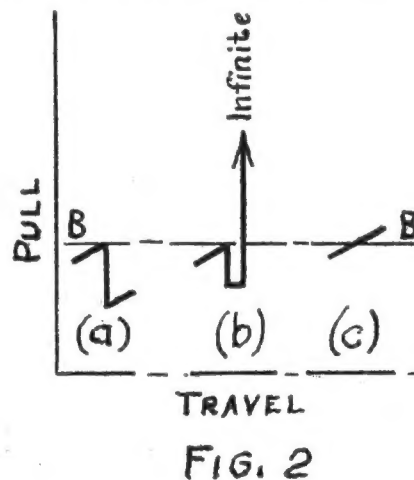


FIG. 2

ture is a brake which dissipates excess finger energy almost without jar to the rifle. With very little disturbance of aim this trigger may be broken fast or slow, or even be jerked if the finger has previously taken "command."

The pull characteristics of these three trigger types are shown in Fig. 2 where resistance to finger is plotted against trigger movement, B denoting the break point on the curves. (a) refers to the common backlash type; (b) the stone-wall type; and (c) the Thomas.

Fortunately, for practical purposes the stone-wall type may be endowed with the characteristics of the Thomas trigger. It is necessary only to provide a spring

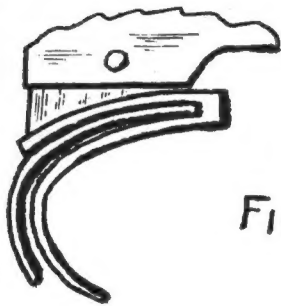


FIG. 3

liner as is shown in Fig. 3. The strength of the spring should be such that it yields barely a few thousandths to the pull weight; then, as the resistance of a spring increases in proportion to the force applied, that is to say in proportion to deformation, the trigger is still a micro-motion type which does not seem to move, yet yields after it breaks if it has been squeezed too fast. Having a Win. 52-C trigger thus converted, I can vouch for the merit of it.

The advantages of this principle in this type might be incorporated in the original trigger itself were the curved part to be constructed of spring stock with suitable elasticity. Perhaps this could be done to the advantage of the user without additional expense to the manufacturer.

THE SHOP

Roy F. Dunlap

Haven't been able to write much for quite awhile. Don't want to write technical stuff of interest to maybe six gunsmiths, or get involved in repeating myself too often. As the man said, "I'll tell you all I know—won't take long."

Lot of miscellaneous talk and trouble at Camp Perry. Weather rough at start of smallbore, throwing shooters out of aggregates before they hardly started, etc. And a few outsmarting themselves. One I know decided to protect his rifle agin the rain by putting strips of tape along the barrel and forend, which isn't exactly original. Only, he taped a little tight—shot a 388, then worse—took tape off, shot 400. Pays not to interfere in any way with a barrel shooting good, I guess. As usual, many shooters using light pulls, with usual muttering and no action. Emmett Duncan of Marines decided to check his Walther free rifle, found he'd won a four-position match with a pour-pound pull, and promptly came down to three. Some day I'm going to walk down a smallbore line with a set of trigger weights in hand, stare intensely at each shooter, and count the number of screw-drivers hurriedly produced. People hate me, but I have fun.

Best alibi heard for not passing the Small Arms School examination: "It was so dark in the theater I couldn't take notes."

Deer and gallery seasons on or coming up now. Can't say much about the former except that the 6.5 m/m does better than the 6 m/m, from my own experience. My 6.5 X 55 seems to kill like the .270 even with its much lower velocity, and my .244 is like a Swift or .22/250—if you place the bullet perfectly it kills now, but a hair off and you got trouble and trailing.

Nothing new in U. S. gallery picture. German firms improving match 22's to get more into the market here—better stocks, fully adjustable triggers—light pull up to over 3 lbs., making left-handed stocks, furnishing with scope blocks, etc. Models in all price ranges, weights, with and without palmrests, hooks, etc.

Now is the time to rework your .22 match rifles—try any new bedding ideas you've heard of, alter the stock, change triggers and anything else that might help. Find out in gallery or odd times outdoors whether things improve, and be ready for the outdoor season in the spring. If your barrel is about done, don't think "I'll just shoot through the winter, it's OK for fifty feet"—then send the rifle to Womack or Hart about the middle of March and expect it back for a match April Fool's Day—you may qualify. And spend a few Sundays watching TV instead of X's. Get things done ahead of time. (Don't do as I do, boy, do as I tell you to do!)

The glass-bedding business has been stickier than ever in past months, since shipping laws stopped transportation of the kits containing liquid catalysts and accelerator. Herter has been including a dry catalyst which is difficult to mix thoroughly with the "glass" and both slower and more temperamental in setting up correctly. The liquid catalyst, I am told by a learned chemical friend, is a 50% solution of para-toluidine in acetone. The accelerator—duh purple stuff—is cobalt naphthenate. Both items reasonably available these days, from plastics manufacturing firms and their supply houses, or chemical supply sources.

RENEWED AND VARIED INTEREST IN THE 6.5 M/M

Early last July, Henry Campbell, Pittsburgh, Pa., wrote me about two 6.5 m/m rifles he had built free-rifle style, which were showing accuracy that he was pretty happy with. He sent two 20-shot groups, fired from bench rest, off sand bags, at 100 yards—one group fired with each rifle. One of the 20-shot groups measured .750", with a high and a low shot that widened the group appreciably and which he admitted were his own fault—not that of the gun. The other group, from the other gun, measured .610" for the 20 shots.

I requested more information about the rifles, and when he replied he sent two more groups, one 20-shot group measuring .770" and a 10-shot group of .330", both shot from bench rest at 100 yards.

Both rifles are chambered for the 6.5 X 55 international match case. The barrels are a matched pair of Douglas XX, ground finish from indicated dead centers, 1.267" diameter. They are chambered with Ratton reamers, having 26½ inches of 1 turn in 9 inches rifling ahead of the chamber, .264" groove. One is stocked with a piece of wood from Winchester in Marksman pattern with hook and adjustable butt plate. The other is stocked Hammerli thumb hole pattern with Hammerli butt plate and hook, and Anschütz fore-end stop and palm rest. One is on a remodeled M54 action and weighs just over 16 lbs., the other is on a M70 action and weighs just over 15 lbs. A Lyman 25X scope was used in shooting the groups.

The same load is used in both rifles—31 grs. 4320—120 primer—Norma cases—bullets of 108.5 grs. hollow point, .9675" long which he makes himself. The bullets are drill hollow pointed ⅛" and held to a weight tolerance of plus or minus 1/10 grain by drilling. Bullet is seated 1/16" and the seating finished by closing bolt.

The cases have the flash hole opened up to #49 drill and are outside neck turned after full length resizing. The chamber is close enough that a new case won't chamber until it is turned. After firing

no neck sizing is needed on new brass for 4 to 8 reloadings.

Mr. Campbell built both stocks and both are glass bedded, one inch ahead of the receiver ring for the M54 while the M70 is full floating.

Mr. Campbell had planned to compete in the National Bench Rest Matches at Johnstown but something must have prevented his doing that, since he did not appear.

While at Camp Perry in early August, Arthur W. Sievers, U. S. Navy marksmanship instructor and team coach from San Diego, Calif., told me considerable about his experience with the 6.5 m/m in long range shooting—600 and 1000 yards. Since there are 1000 yard matches in California at least once a month, throughout the year, Mr. Sievers has had plenty of opportunity to test the 6.5 m/m at the long range under competitive conditions and he showed me his score books with plenty of high-V possibilities at both 600 and 1000 yards, fired in competition. After much experimenting he has settled on a custom case formed from .30-06 brass. I did not make notes of his loads but as I recall, and as seems probable, he used one of the longer, heavier match bullets with a healthy powder charge to give the bullet the initial velocity needed for the long ranges. He is quite convinced that his 6.5 m/m is a reliable, efficient cartridge for long range target shooting.

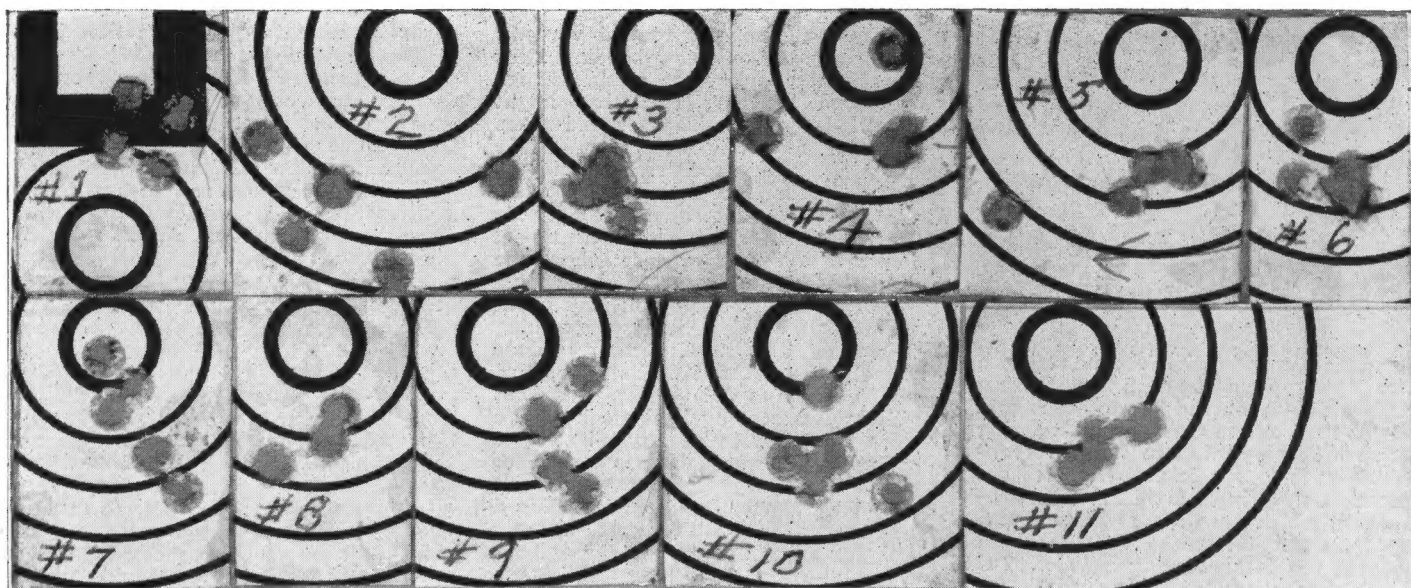
Then, at the National Bench Rest Matches in Johnstown, N. Y., Gerald Southard, a long experienced bench rest competitor from Sussex, New Jersey, who never has been a shooter to follow the crowd for the sake of being sociable, showed up with a husky custom 6.5 m/m with case made from .30-06 brass. His rifle was a Douglas 30 inch barrel with 1 in 10" twist on a Rem. 721 action. His load was the Speer 140 grain bullet with a basic charge of 52.5 grs. 4350 powder, though he varied the powder charge slightly as he thought conditions dictated the need for it.

Mr. Southard frankly admitted that he did not expect to win the championship, but that the rifle had shown such fine accuracy in his experimental shooting at home that he wanted to compare it in competition against the hot 22's.

He did not arrive for any shooting the first day, but on Friday, in the 100 yard warm-up matches, he fired 5-shot groups of .431, .380 and .281, and 10-shot groups of .601, 1.071 and .943. Saturday, still at 100 yards, he fired 5-shot groups of .475, .533 and .501. For the five 10-shot groups of the National Course he shot .893, 1.011, .754, .807 and .710 for a .835 aggregate average. For the five 10-shot matches of the 200 yard stage of the National Course on Sunday he shot 1.621", 2.061", 1.261", 2.071" and 2.411" for a .9425 minute of angle aggregate average. His aggregate for the National Match Course was .88875 minute of angle. He did not win any matches but his average shooting was very nearly on a par with two other equally experienced bench rest shooters (also inveterate expemiernters) who were shooting .22 cal. guns. He did demonstrate that the 6.5 m/m with a husky powder charge is a cartridge not to be ignored, accuracy-wise.

Further, from the three foregoing case histories, it would appear that with case capacities and powder charges tailored to fit the job to be done, the 6.5 m/m is a versatile caliber.

P. H. T.



WHY NOT A SINGLE SHOT PISTOL?

Kent Bellah

Single-shot pistols are the most accurate handguns made. I've always contended we need a line of these in quality, target-grade pistols, chambered for .38 Special, .357 Magnum and .44 Magnum. This will bring down the wrath of .45 ACP fans, so let's make a contraption for them, even if bulls have to be punched out via a ramrod. The .32 fans needn't think I overlooked their pet caliber. What will a .32 do that can't be done with a .22 L. K. or a .38 Special? These guns are not for matches.

Their value is having a quality, one chamber tube for real precision shooting, in center fire cartridges. The best grade of .22 automatics made in the U. S. can be single-loaded if desired, and their accuracy is very near the ultimate of the ammunition. The pistols I have in mind would be real sweet to test handloads or factory ammo. They would be especially fine with a scope; you could check the accuracy of your ammo, and you could check the accuracy of your revolver against a one-chamber tube.

Stupid laws, of course, prohibit using a rifle stock, or stock attachment, even on non-criminal type sporting handguns.

I believe there are plenty of shooters who would buy such guns, at near the price of a fine revolver, say \$125.00 or so. An established manufacturer could get a return on his investment at that price, even with a low sales volume. Of course they would have to be fine pistols, far better than cheap plinkers. They would need excellent target sights, a heavy rib barrel, and some provision for mounting a scope if desired. Most fellows would use custom stocks, and a good grip should be used with this in mind, or good stocks used as standard equipment.

Like many shooters, I'd need at least two in each caliber to be happy, and 7½" and 12" tubes should be available. A .22 Hornet would be a nice varmint number with handloads, and easily chambered to a K-Hornet that would also handle the Harvey .224 Kay-Chuk wildcat handgun ammunition. Without alteration, it would handle the new Harvey Kay-Chuk Junior revolver loads, that come within about 100 to 150 f. s. of Kay-Chuk velocity in a converted Smith & Wesson K-22 or K-22 Magnum Rimfire.

ENCYCLOPEDIA OF MODERN FIREARMS, PARTS & ASSEMBLY

When I received Bob Brownell's announcement, last summer, that the Encyclopedia of Modern Firearms, Parts & Assembly, which he had for months been compiling, was being readied for the printer and would be available in early autumn, I sent a pre-publication order and check before I attended to anything else. Now that I have seen and examined this book I am more convinced than ever that I have made a good investment.

This IS NOT any "story book." IT IS a reference volume of Parts and Assembly for all American firearms in common use today, including many discontinued models—and the FIRST time that ALL this reference material has been available between the covers of ONE book. This book is of untold value to everyone who has anything to do with the repair and maintenance of firearms, be he practicing gunsmith, hobby gunsmith, or just plain gunbug tinkerer.

This has to be a BIG BOOK (1057 8" X 11" pages) to contain all the reference material it does, some of it never before generally available. The compiling of such a reference volume could not have been possible without the co-operation of the arms manufacturers in making available their parts illustrations and parts list plus, in many instances, complete instructions, with illustrations, for disassembly and assembly of many of their models; and the Department of the Army in permitting reproduction in their entirety of four technical manuals covering sporting shotguns, the Springfield rifle and the .45 Co't automatic pistol.

Even the binding of the book is such as to make it a practical, on-the-job source of reference. Even with the new book, you can open it to any page and the pages will lay flat. You can open it at the page of reference you want, lay it on the work bench handy to your work, and be able to refer to it as you need to without laying a wrench or a soldering iron on the book to hold the pages open, where you want 'em.

No brief "review" can do justice to this book. I am convinced that anyone doing considerable repair and maintenance on modern sporting firearms can consider the cost of this book as an investment, rather than an expense.

The book may be obtained from BOB BROWNELL S, Montezuma, Iowa, and the cost is \$17.00.

P. H. T.

WIND AND MIRAGE TESTS

The targets shown above were fired in making tests under daytime shooting conditions to determine the effect of wind and mirage on the performance of the .222 Remington Magnum cartridge. The tests were made by Geo. M. Fullmer and Joe McPhillips in California. No attempt was made to "hold off" to counteract the effect of wind and mirage. The purpose of the test was to try to determine how much the wind and mirage encountered did affect the point of impact of the .222 Magnum. Shooting was at 100 yards. The rifle used was a new one which had never been fired before. It had a Hart barrel on Mauser single shot action. The load was 25 grains 4198 with 53 grain bullets made in Bahler Die Shop dies, in Remington cases. Fullmer comments: "We had no powder charges to go by and this load may be a bit excessive—primers were flat and in this gun I would not care to go much higher."

The shooting record by target number: No. 1—Joe fired 7 foulers and then this first target, 5 shots in light wind and slight mirage.

No. 2—Joe cleaned the gun and then fired these with no foulers.

No. 3—Joe says I wasn't holding so well here—got the fifth one out.

No. 4—Three in one hole, top shot was a 12 o'clock breeze that changed direction of the mirage, one shot was in no wind.

No. 5—Wind changed direction.

No. 6—Wind held even.

No. 7—From here on the mirage picked up to such an extent that the rings on the target were invisible at times—wind from 12 o'clock.

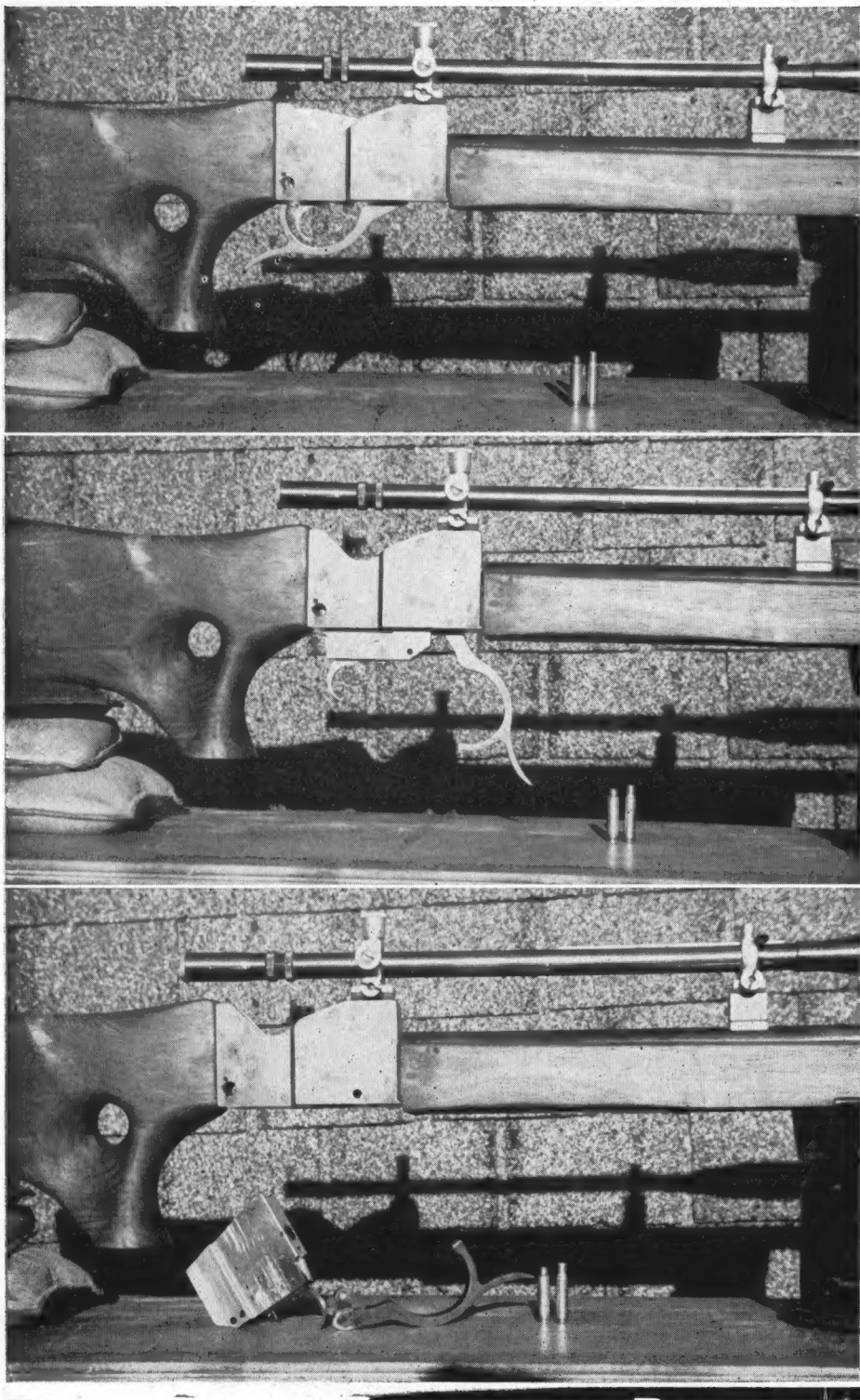
No. 8—Normal wind with a lessening of mirage.

No. 9—Cleaned gun—no foulers. Still had mirage effect.

No. 10—Fog coming in—alternate clouds and sunshine.

No. 11—Still in fog and the sun is out entirely.

George Fullmer comments in conclusion: "After looking these targets over I can see why it is that Joe can win matches. He shoots so much in poor conditions that he can automatically figure where the bullet will land and with this knowledge he can figure where the group should be without waiting for a puff of wind to let it off."



UNUSUAL RIFLE ACTION DESIGN

A rifle with action of quite unusual design attracted considerable attention at the National Bench Rest Matches on Friday, September 4th, and is illustrated herewith. The top view is with action closed, the middle view with action open and the bottom view shows the entire action assembly removed from the receiver.

While the drop block action has some original features, it is not especially unique in operation or ease of disassembly. The shape of the receiver is certainly "different," which it rather has to be to accommodate what this writer considers the really important feature of the rifle assembly, and quite possibly a very worthwhile feature.

Note that the center-line of the buttstock is parallel with the bore line and

apparently at least very closely a direct extension of the bore center-line. That, of course, puts the resistance to the rearward power thrust (recoil) in line with the forward thrust, instead of at an angle below, as has been the case in conventional rifles of the present and past.

My first impression was that this rifle design wouldn't be very practical to shoot from the shoulder in standard shooting positions. But the longer I look at the photos and consider the rifle as I saw it, the more convinced I am becoming that the design might not only be practical but a real aid to accurate shooting from the shoulder, especially from the prone position. It might even be as practical and desirable in the other standard shooting positions.

The necessary high line of sighting would not need be especially undesirable for target shooting at known ranges. It

is not much if any higher than the sighting line on some of the "Bull-Pup" rifles, or on at least one of the scope sighted NATO military rifle designs. Metallic sights for this height of sight line would appear at least "unusual," but would not be impractical for target shooting.

This "in-line" design of rifle should permit using a low, steady prone position with a good, firm butt placement on the shoulder. It seems as if it might minimize "apparent" recoil, since it would seem that the rifle would not tend to "rise" when fired, as is the case with conventional designs. Both features would seem to be quite desirable in the specialized long range target shooting with rifles using powerful cartridges.

The above impressions are at the moment "just dreaming." Ed Decker, who lives in Franklinville, New York (some 20 miles north of Olean) designed and built the rifle. The action is entirely hand made and Mr. Decker says it took him nearly two years to make it and get it just as he wanted it. He says he has no intention of making any of the actions for sale. The rifle Mr. Decker has made has a Douglas barrel and is chambered for the Remington .222 Magnum cartridge. The scope he was using at Johnstown was a 16X Unertl.

Mr. Decker was only able to be at Johnstown to shoot the 100 yard warm-up matches on Friday. He comments in a letter: "I shot a .227" group Friday and then got steadily worse as the mirage increased until the last group was nearly an inch. I hope to do more shooting next summer and develop a little more skill in doping mirage and wind."

In the 5-shot matches, the .227" group was second smallest in that match and his following two were .490" and .530". His 10-shot groups were .750", .770" and .974". This was Mr. Decker's first formal bench rest competition. He was shooting Sierra 53 grain bullets ahead of 26 grs. of 4895 powder. His loading equipment wouldn't be considered "tops" by most of the experienced bench rest shooters there. All things considered, Mr. Decker and his unusual home-made rifle demonstrated the probability of some excellent future shooting performance. He has done some original designing, backed by very excellent craftsmanship and proven its practicability.

P. H. T.

SPLIT NECK CASES

After mention several times in recent months of split neck cartridge cases having little ill effect on rifle accuracy, when I had a .308 Win. case show the beginnings of a split, several weeks ago, I continued to reload and shoot the case to see what happened. To date I have reloaded that case with full charges and fired it six times. In every one of those six firings the shot from that split neck case has printed within the forming group. The split in the neck is now extending nearly to the base of the case neck. I shall continue to shoot and observe that case as long as the case neck will hold the bullet reasonably firmly.

It has been reported that bench rest shooter Homer Culver, Silver Springs, Md., has, as an experiment, split a case neck with a fine saw, splitting both sides of the neck, and did not observe any marked ill effects on accuracy from that experimental case.

I would not recommend shooting split neck cases in target competition, and certainly not for hunting loads, but in the

(Continued on Page Nineteen)



Part of the pistol firing line at the Darien (Conn.) Rifle and Pistol Club. Temperature, a bracing 20 degrees.

PISTOL SHOOTERS ARE A STURDY CREW

by William E. Peterson

Take for instance, the pistol shooting fraternity of the Darien (Connecticut) Rifle and Pistol Club, Incorporated. Although the Connecticut winter has nothing very balmy about it, every Sunday afternoon will find these addicts on the firing line, and apparently enjoying it. You might think they had received an inside tip from one of those Tibetan lamas who are reportedly able to keep warm by some inner force, while arrayed in a nightgown, in the midst of the Himalaya snows.

Well, there is a secret to it, or perhaps several secrets. These boys have worked out a method. In the first place, they are mostly people whose normal occupations are indoors, so they crave the few hours of pleasure and competition in the fresh outdoor air, even though the temperature is a nice brisk, bracing 20 degrees (above, not below; after all, we're not entirely crazy). Of course, you can dress for this temperature, or even below it, and be quite comfortable for long periods. Two suits of long underwear, a couple pair of wool socks, heavy wool shirt, heavy pants and shoes, and one of those parkas with a hood, and you can stand around for half an hour or more in the open without wishing it was summer. You'll be comfortable pretty much all over—all but your gun hand. Try holding a piece of cold iron in your bare hand at 15 or 20 degrees, long enough to shoot a few strings, and you'll get the idea.

First experiment was naturally to try shooting the handgun with a good glove on, or one of those trick mittens with a slot for your trigger finger. Well, it doesn't work. Your grip is different, padded out with the glove, and you can't thumb the hammer on a revolver easily or dependably in rapid fire. Then one genius came along with a bright idea. He obtained a mitten too large for his hand, cut off the thumb and sewed up the hole, then cut a slot in the top of the mitten. Put his hand in the mitten and stuck the grip of a .22 automatic down through the slot into his fist. Thus his hand was entirely covered, trigger finger and all, and still he had the usual bare-hand grip on the gun. This was voted a great success, and various of the members came out with similar gun gloves, some

made of sheepskin, cut and sewed to shape—crude but effective.

But this was only part of the answer. The gun itself was still cold, mitten or no mitten. So up came another idea. On the top of the little Sears-Roebuck oil stove which kept the club shack at a nice warm 50 degrees, a rack was mounted, with crossarms. Guns were hung by their triggerguards on the crossarms, and left there until they had reached a genial warmth, then taken out and fired. Ten minutes or so of toasting was usually enough, and good for a half hour's shooting. After this the gun would become chilled due to exposure out of the mitten while reloading, and would get another treatment over the oil stove.

Some difficulty was experienced by some of the group in thumbing the hammer of a revolver with the gun glove on. This was met by making the slot in the top of the glove larger, to permit the thumb to reach the spur of the hammer. Others, however, who shoot the revolver double-action, found no difficulty.

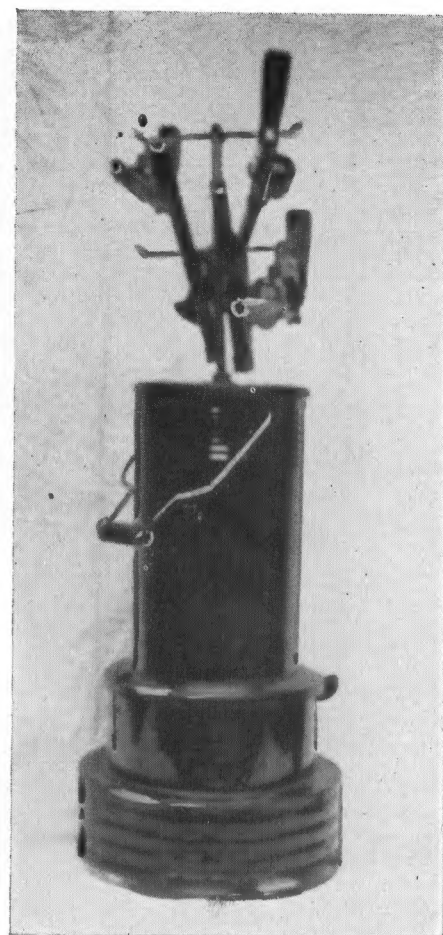
Plans are now afoot to close in part of the firing line, providing little windows to shoot through. This will keep out the wind as well as the cold, and add general comfort. But the guns and hands would still be cold, except for the gun glove and the oil stove. The entire combination, however, is pretty near ideal.

You may think we are a bit teched in the head going to all this trouble instead of putting off our outdoor shooting like sensible folk until spring. But it does seem better than doping half-asleep over the Sunday paper in an overstuffed armchair beside the radiator. Anyway we think it is.

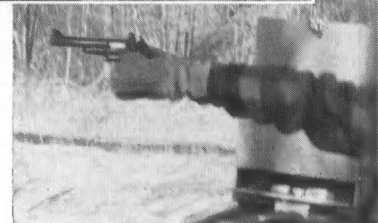
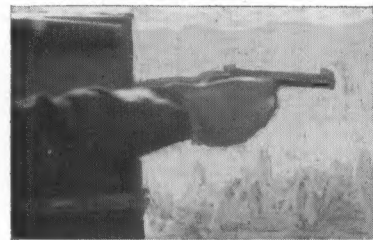
TOURNAMENT CIRCUIT BALTIMORE, MARYLAND, FREE RIFLE MATCH

Karl Raidma once again proved too tough to handle as he won the Free Rifle match at Petapsco Range on October 11th. His win of the Fall match made it a clean sweep of the season's free rifle competition.

The Associated Gun Clubs of Baltimore stages two free rifle (small bore) matches each season as part of the outdoor shooting program. With over 25 clubs participating in the Association, the Petapsco Range offers a complete schedule of small bore, .30 cal., pistol, bench



Five handguns warming up over the oil stove before being taken to the firing line.



Two examples of "gungloves"—merely a thumbless mitten with a slot in the top to admit the grip of the gun.

rest and muzzle loading events. These two free rifle matches were part of a season program that saw the range in use every weekend. They were both an individual and a five man team affair.

The prone firing got under way beneath a low threatening overcast that helped conceal some of the tricky wind currents flowing over the range. They were least troublesome to a junior shooter, young Ben Craft, whose 388 was high for the prone stage. Karl Raidma was second with 385, followed by Clinton Fowler with 384.

The heavy overcast began to break and the breeze picked up in fitful puffs as firing began in the standing position. Shooting slowly and deliberately, Karl

Raidma chalked up a 337 to take first place. Teammate Kaljo Roomets had a 329 for second place and Tom Gary was a close third with 324.

After a break for lunch the kneeling stage was started with a scattered to broken cloud cover and a freshening three o'clock breeze. The last shots of the match were fired with thunderheads piling up in the Northwest. Clinton Fowler and Bill Funk were at a stand off in this stage with 356 each, and Karl Raidma third with 347. The targets were taken down and as the last pieces of equipment were packed away the first drops of rain fell, the forerunners of a heavy shower that lasted for an hour.

Trophies were given for the first six places in the individual competition. Karl Raidma used an Anschutz M54 Match to take first place with 1069. Clinton Fowler fired a Remington 40X to take second place with 1053. William Funk shot his third place 1048 with a Hammerli. Fourth place fell to Tom Gary with 1033, using a Winchester 52. Kaljo Roomets shot an Anschutz M54 Super Match for his 1031 fifth place score. Kaljo Popp used an Anschutz M54 Match to round out the award winners with 1012.

As this was also a team match, trophies were given for the first two teams. The five high men from each club counted for the team score. First place went to the Rifle and Pistol Club "Estonia" of Baltimore. The Rifle and Pistol Club "Estonia" of Lakewood, N. J. took second.

In the late 1930's, Finland, Estonia and Switzerland were the three dominant powers in International shooting. Shooting was one of the ranking national sports in these countries. Darkening war clouds and international intrigues uprooted the Estonian people and many found themselves drafted into the armies of the powers involved. A shell burst of the Eastern Front cost Karl Raidma his legs and only through a large measure of personal "guts" and tenacity did he escape with his life. (As a sidelight, his shooting positions are entirely conventional.) This was but one of many personal tragedies, these people were forced to live through.

When World War II came to its conclusion, many Estonians found themselves in Germany and eventually emigrated to the United States. Their love of the shooting sport was still strong and they have organized shooting clubs in Baltimore, Lakewood, N. J., New York and Toronto; to name a few. They are a welcome addition to the American shooting game, and at the same time there is much that we can learn from them.

William Funk

CONNECTICUT HIGH POWER RIFLE CHAMPIONSHIP

The Connecticut Rifle and Revolver Association uses the D. C. M. 200 yard qualification course as the course for its individual high power rifle championship, partly because it provides many of the competitors their only or most convenient opportunity to fire the annual qualification course, and partly because it provides a course of variety for the 200 yard range. Since they have been using this course for their state championship it has always drawn a good entry and in the 1959 match on October 4th there were 107 who fired.

Sam Burkhalter, now living in Stamford, Conn., and Leo Gustafson from Cross River, N. Y. finished with identical aggregate scores of 209-29V. Burkhalter had a one point and one V higher score

ford, Conn., and Leo Gustafson from Championship Trophy.

Martha Ventres, Connecticut's top high power riflewoman, was third with 207-32 and Gerson Jacobson, Wallingford, Conn. was fourth with 207-20. E. H. "Bud" Ebdon, also from Wallingford, was fifth with 206-20.

WELL-RUN PISTOL TOURNAMENT

William E. Peterson

The 1959 tournament of the Westchester County (N. Y.) Police Revolver and Rifle League, Inc. was fired on two ideal days, calm and cool, September 12 and 13. This shoot is very popular with civilians as well as police, and as usual was well attended. The modest sum of \$2.00 was the total expense to police and civilians alike, giving the latter five matches in which to compete, including two team matches. The course of fire in every case was the standard police course, thirty shots, and the target the police target with the ten-ring only black, five inches in diameter. This is similar to the Army pistol target, except that an X-ring is added.

Since this is not a registered tournament, the League is enabled to cut corners and avoid many delays by making their own regulations. For instance the firing line of twenty-four shooters was made up without regard to the caliber of gun used, in increments of four shooters, some groups firing .22, some .38, and others a "novelty" match which covered other calibers up to .45. In consequence a shooter would be called to the line very soon after making his entry, and could get all his shooting done in half a day. Other factors contributing to celerity were the rapid scoring, the disciplined range officers who promptly signalled and the uninterrupted sequence of firing when their part of the line was ready, commands with none of the irritating "As you were" so common in the usual pistol match. A further point was the immediate tearing off of any target in dispute, to be decided back of the firing line, while target boys followed right on the heels of each scorer stapling on new targets. With all this there was no feeling of undue haste; everything running with the smoothness gained through the many years during which this tournament has been held (this was the thirteenth annual event).

In consequence of observing the principles outlined above, during the two days, the amazing number of seventy-two teams plus five hundred and forty-seven individual matches were fired, with only twenty-four firing points. In all, two hundred and forty-two registrations. And at no time was there any sense of hurry or urging to take its toll of scores. It must be noted that these were not the twenty-shot matches familiar in registered tournaments, but thirty-shot matches, each having to be scored three times. It is to be regretted that registered tournaments cannot be so arranged and handled to secure the benefits of this smooth celerity.

In several respects the range of the Westchester County League is unique, notably the backstop which is a 100-foot high sheer granite cliff. At the foot of the cliff is a sharply sloping earth bank covered with grass. Back of each target in the slope, is a tunnel with timber sides and roof. The bullets go into this tunnel and stay there without ricochets. The firing line is roofed with translucent

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green fiberglass, which has the curious effect of making gunsights appear black even if they have not previously been smoked. This cover has a downward tilt to the rear, aiding in confining the sound of firing between the firing line and the high backstop, so that at a distance of one hundred yards the firing is barely perceptible, a most important element in a range situated in a suburban area.

Some of the top individual scores fired in the various matches in the 1959 tournament were: Police .38 cal.—Ptl. Machia, West Co. Parkway, 297; Carl Johnson, Sing Sing Prison Guards, 297; Ptl. Joe Campanaro, Yonkers, 298. Civilian .38 cal.—Fred Rubeo 296, Jack Wade 293, Ray Cuthbertson 292.

Police .22 cal.—Guard Carl Johnson 299, Ptl. Joe Campanaro 299, Ptl. Robt. Madden 298. Civilian .22 cal.—Harry Wolff 300, John Colt 300, Fernando Rubeo 300.

NEW JERSEY RIFLE LEAGUES

New Jersey Rifle Leagues (at least some of them) hold individual "Victory Matches" following the close of their regular league team shooting schedule.

High scores in the Victory Match of

(Continued on Page Eighteen)

National Bench Rest Shooters Association, Inc.

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EXPERIMENTAL TARGETS AVAILABLE

The proposed target for Varmint Rifle which was illustrated in July Precision SHOOTING has brought mixed comments. Some shooters and clubs have expressed an interest in it, while others would have no use for it, whatever.

This proposed target was never intended for record competition but was suggested as a possible interesting target for local competition on ranges that are not equipped with a moving backer mechanism.

In order that the target may be given a fair trial by those who may be interested in its possibilities for adding variety to a Varmint Rifle shooting program, a limited quantity of the targets have been printed from the plate used for the magazine illustration, and are now available, without charge, to those who may wish to give them a shooting trial and will request them. When requesting these trial targets, please state whether they are for individual or club trial, and the approximate number that are believed necessary for a fair trial.

The targets are not printed on target tag-board but are printed on a white card stock of reasonable weight which should provide a reasonably clean-cut bullet print.

Request for trial targets should be sent to National Bench Rest Shooters Association, Inc., 64 Depot Street, Lyndonville, Vermont.

GAL SIX SHOOTING 1959 NATIONAL BENCH RIFLE CHAMPIONSHIPS

SHOOTING SUMMARY AND COMMENTS

First of all, a correction for an inadvertent error made in the October report. Clyde Yockey was not runner-up in the 200 yard stage of the National Championship Aggregate. After receiving the official results bulletin we find that Clyde did not place in the top ten for the 200 yard aggregate but his .5982 was quite good enough to give him the runner-up spot in the Championship aggregate.

Stanley Savich from Aliquippa, Pa. was the runner-up in the 200 yard stage with a .5160 minute of angle aggregate average.

Following are the top ten in each the 100 yard and 200 yard stages:

100 yard stage of National Course	
Paul O. Gottschall	.3346
Clyde Yockey	.3696
Wallace Hart	.3888
George McMullen	.4028
Olive Walker	.4100
Crawford H. Hollidge	.4104
Ed McNally	.4138
John S. Hutchinson	.4338
Irven M. Mohnkern	.4498
Charles Debaugh	.4500
200 yard stage of National Course	
Robert Hart	.4757
Stanley Savich	.5160
Albert W. Hauser	.5341
M. H. Walker	.5424
Chas. Debaugh	.5470
Alfred K. Glendening	.5483
Robert F. Stinehour	.5501
John S. Hutchinson	.5517
Frank Murdock	.5529
William F. Cotter	.5707

Twenty-six of the 106 who completed aggregates at 100 yards had under one half minute of angle aggregate averages. While only one of the 105 who completed aggregates at 200 yards had under a half minute of angle average, 19 had averages under .600 minute of angle.

There were a total of 31 matches fired for group during the four days, plus one shot for nearest to center hit, fired at 200 yards. Of the 31 matches, 5 were fired with Heavy Varmint Rifles and 26 with unrestricted bench rest rifles. The listing of match winners for all fired matches follows:

THURSDAY, Sept. 3rd: Three 5-shot matches at 200 yards: First match, Robert F. Stinehour .320 inch; second match, Dr. A. G. Parker .565 inch; third match, Joe Dunnington .370 inch.

Three 10-shot matches at 200 yards: First match (merchandise), Dr. A. G. Parker .850 inch; second match, Robert Stinehour .845 inch; third match, Omar Rinehart .618 inch.

Two 10-shot matches with Heavy Varmint Rifle at 200 yards: First match, Lawrence Rucker 1.600 inch; second match, Lawrence Rucker 1.190 inch.

FRIDAY, Sept. 4th: Three 5-shot matches at 100 yards: First match, Ed McNally .170 inch; second match, A. H. Angerman .182 inch; third match, W. M. Brown .180 inch.

Three 10-shot matches at 100 yards: First match (Merchandise), Carl McCrory .330 inch; second match, Clarence Deem .350 inch; third match, Omar Rinehart .320 inch.

Two 10-shot matches with Heavy Varmint Rifle at 100 yards: First match, Omar Rinehart .550 inch; second match, Irven Mohnkern .355 inch.

SATURDAY, Sept. 5th: Three 5-shot matches at 100 yards: First match, Howard King .151 inch; second match (merchandise), Alex Hoyer .155 inch;

third match, Maynard J. Toutant .145 inch.

Five 10-shot matches at 100 yards (National Course): First match, Ed McNally .218 inch; second match, Homer Culver .300 inch; third match, M. H. Walker .240 inch; fourth match, Robert W. Smith .249 inch; fifth match, Clarence Aumiller .242 inch.

SUNDAY, Sept. 6th: One 5-shot (merchandise) match at 200 yards—winner, Samuel Rothrock .352 inch.

One 5-shot Light Rifle match at 200 yards—winner, Warren Page 1.280 inch.

One Shot Center match at 200 yards—winner, George Kelbly.

Five 10-shot matches at 200 yards (National Course): First match, Alfred K. Glendening .750 inch; second match, M. H. Walker .802 inch; third match, Robert Hart .528 inch; fourth match, Stanley Savich .750 inch; fifth match, Edward Speary .654 inch.

For the Grand Aggregate of all matches fired during the four days with unrestricted bench rest rifle, including both 5 and 10 shot matches at both 100 and 200 yard ranges, according to the editor's computation Robert F. Stinehour was the winner with a .45114 minute of angle average, and barely edging out Ed McNally who had a .45435 aggregate average. We believe this to be the Grand Aggregate course of fire for which the TAYLOR AND ROBINS TROPHY is awarded.

DISTRIBUTION OF WINNERS:

From the foregoing it will be noted that there was no one shooter who was outstanding in winning fired matches. Omar Rinehart from Salem, Ohio, won three matches during the four days shooting, two of them with unrestricted bench rest rifle and one with varmint rifle—all during the first two days of the matches. Altogether he placed in either the top 3 or top 5 of 8 of the 31 matches fired for group. However, he did not place in the top 5 in any of the fired matches of the Championship Course, nor in any of the aggregates.

At the other extreme, Paul Gottschall did not win a fired match, he only placed in 3 of the 23 matches he fired, all in the 100 yard stage of the National Course (a second and two fourths), but he did win the 100 yard aggregate of the National Course as well as the 1959 National Championship.

Five shooters won two matches each—Ed McNally, Robert Stinehour, Lawrence Rucker (two varmint rifle matches), M. H. Walker and Dr. A. G. Parker—while 19 shooters won one match each.

Giving a little broader picture of prize place distribution—61 of the total of 113 who fired in at least some of the matches during two days either placed in top 3 places in the matches of the first two days, or in the top 5 places of the final two days matches. Actually there were more prize winners than that, since prizes should have gone to 4th place on Friday, and to 7th place on Saturday and Sunday. It can safely be said that at least 60% of the competitors placed in the prize one or more times.

GROUP STANDARD OF ACCURACY

SHRINKS: Since the weather for all four days of the shooting at Johnstown was perhaps a bit better than average good daytime shooting conditions, a summary of groups fired there should give a pretty good idea of the accuracy required to get in the top rankings in large match-

es having from 60 to over 100 competitors.

It appears that we have reached the point where considerably smaller than quarter of minute of angle groups are required to win 5-shot group matches at 100 yards, but that under quarter of minute of angle groups are still reasonably sure to win 10-shot matches at 100 yards. With some 80 shooters competing in the three 5-shot matches at 100 yards on Friday, there were 16 under quarter inch groups fired and the **biggest** group to win a match was .182 inch. With 106 competing in the three 5-shot matches at 100 yards on Saturday, there were 36 under quarter inch groups fired and the **biggest** group to win a match was .155 inch.

But in matches calling for 10-shot groups, the under quarter of minute of angle group is still a reasonably sure match winner. There were no under quarter inch groups fired in the three 10-shot matches on Friday, and only four in the five 10-shot matches at 100 yards on Saturday, each one of which was a match winner.

At 200 yards the under quarter minute of angle 5-shot group is a pretty sure bet to win or place in most bench rest matches. In the three 5-shot matches fired at 200 yards on Thursday there were just three under quarter minute of angle groups fired, two of them being fired in the first match and the other in the third match. In the one 5-shot match at 200 yards on Sunday there were four under quarter minute of angle groups fired.

Under quarter minute of angle 10-shot groups at 200 yards are **very, very rare**. The present recognized national record of .4016 inch has stood virtually unchallenged for three years. There were no under quarter minute of angle 10-shot groups fired at 200 yards at Johnstown in 1959.

Half minute of angle aggregates for five 10-shot matches under fair to good conditions is good accuracy and nothing for anyone to be ashamed of, but to get into the prize list at any good sized bench rest competition it will take close to four tenths and well under four tenths is a much surer bet for clinching the top-dog position. Of the 106 who fired the five 10-shot match aggregate at Johnstown on Saturday, 26 (approximately 25%) made half minute of angle aggregates or under. But a half minute of angle aggregate for five 10-shot matches at 200 yards is pretty sure to put you in the prize list at any bench rest competition, and is usually a fair bet for top spot. Bob Hart, the winner, was the only one with an under half minute of angle aggregate at Johnstown on Sunday.

But a full half minute of angle 10-shot group at 100 yards has an awful slim chance of winning any bench rest match—and if you fire a half minute group in a 5-shot match at 100 yards, you had better start at the bottom of the list and look up—you'll find your ranking position quicker that way than by starting at the top. Even at 200 yards, in any sizable match, a full half minute group won't put you very close to the top, but for 10-shot groups you won't be quite so far down and might even hit the tail-end of the prize list.

For the three 5-shot matches at 200 yards on Thursday, with some 60 competitors, the number of half minute or under groups in each match was 20-20-17 respectively. And for the one 5-shot match at 200 yards on Sunday, 48 of the 106 competitors fired half minute of angle or under groups. For the five 10-shot matches at 200 yards on Sunday, with 106

competitors, the number posting half minute or under groups in each match were 13-8-15-11-22 respectively. Only 11 half minute or under groups were fired in the three 10-shot matches at 200 yards on Thursday.

The pitiful plight of full half minute of angle 5-shot groups at 100 yards is plainly shown in the tally at Johnstown. For the three 5-shot matches at 100 yards on Friday, with some 80 competitors, the number posting half minute or under groups in each match was 47-42-42 respectively. For the three 5-shot matches that started off the day of 100 yards shooting on Saturday, with 106 competitors, the similar tally was 78-77-84.

The full half minute 10-shot group at 100 yards won't put you so far down the ranking list, but it won't put you very close to the top, either. For the three 10-shot groups at 100 yards on Friday the half minute and under group tally was 19-14-17. It was even tougher in the five 10-shot groups at 100 yards on Saturday when the half minute or under group tally per match was 41-25-38-48-29.

The "Top Twenty" ranking list last month showed you that five competitors had National Match Course aggregate rankings of under half minute of angle. Thirty-six others had aggregates ranging from half minute to six tenths minute of angle. Only twenty had aggregates over three quarters minute of angle, and only one of those had over minute of angle. Incidentally, the one shooter making over minute of angle aggregate was shooting a practical field varmint rifle weighing 14 lbs. with scope and chambered for the .22-250 cartridge, and he was shooting in his second registered bench rest competition.

HOW MUCH PROGRESS?

Some of the foregoing statistics look quite impressive, perhaps even discouraging to some new or prospective bench rest competitors. Let's do a little comparing and see how much and where accuracy progress has been made. The 1955 and 1957 Nationals were fired under comparable weather conditions and number of competitors not very much greater.

In 1955 three competitors had National Championship Course aggregates under half minute of angle, in 1957 there were three, but in 1959 there were five.

In 1955 two had under half minute of angle aggregates for the five 10-shot matches at 200 yards, no one had a 200 yard aggregate under half minute in 1957 and only one in 1959.

In 1955 20% of the competitors in the five 10-shot matches at 100 yards had under half minute aggregates, in 1957 30% and in 1959 25% had those half minute aggregates.

The above might give the impression that very little progress has been made over the period of five National Matches. But let's look just a little bit further.

In 1955 41% of the competitors had National Match Course aggregates in the range between .500 and .750 minute of angle; in 1957 55% were within that same range; and in 1959 the competitors within that same aggregate range had increased to a full 80%.

In 1955 44% of the competitors placed in the prize list in one or more matches of a four day program, while in 1959 60% got into the prize list at least once.

This "comparer" interprets indications of progress thuswise; While winning groups and aggregates have shrunk very little if at all in the past four years, the field of competitors with skill and equipment to threaten winners in any

BEGINNERS CORNER

Robert Stinehour

Many rest shooters have bought and tried the Bausch & Lomb BALvar 24 scope, including myself. Last Spring I bought one and tried it some on my best rifle and came to the conclusion that my average groups were at least a third larger than with my Unertl 20X on the same rifle. The reticle was no problem to me, and the optics were beautiful, so one had to come to the conclusion that the fault was in the mount. I sold the scope.

At the Nationals at Johnstown I had my first view of the BALvar 24 belonging to Homer Culver, for which he had built a Unertl type rear mount to replace the B & L mount. I had heard of this mount, and like all of Homer's work, it was superb. When he told me he would sell it, I quickly grabbed it.

I did not use it at Johnstown but tried it on my good rifle immediately after arriving home. I tried two groups and they were two of the smallest groups this rifle has ever fired. With these results, I could hardly wait for the Plainfield match to try it in competition over the National Match Course. As expected, the aggregate turned out to be a good one (.441 moa) and I believe my smallest to date.

The recoil spring was used as tight as it was possible to get it, and by using two different points of aim the scope was not changed from 100 to 200 yards, except for focus.

This mount is a big improvement over the factory job, though perhaps it isn't the complete answer to what we need.

An encouraging thing is that we can look forward to improved mounts in the future. A recent letter from Phil Brown of Bausch & Lomb tells me that B & L realize their mount to be lacking and plan to make a better set-up. Let's hope we don't have to wait too long, for this excellent scope sure warrants a better mount. Perhaps the people who are playing with a solid mount are on the right track.

I am not about to sell my Unertl 20X, but I must admit that this "Improved" BALvar 24 is really something.

bench rest match has increased very noticeably. In general, it is the shooters with several years of experience that do most of the aggregate winning, BUT, in any sizable bench rest match they are well aware that they have a herd right on their heels and that they cannot make a single bad bobble and expect to win or place in the big aggregate.

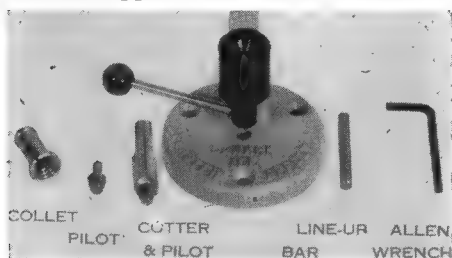
Eight or nine years ago, in the bigger matches, it was not unusual for from maybe two to five competitors to "steal the show" and take a large share of the important winnings of the matches. That situation seems to be past. Never has any individual or small group dominated the winning in bench rest matches for any extended period. Many of the heavy winners of past years are still shooting as well or better than ever, and still winning a share of the matches, but only a share. I think most of those old-timers will admit that the competition is simply getting tougher as the years go by, as more shooters gain the necessary experience and acquire the equipment needed to give that tough competition.

In December 1957 Precision SHOOTING I concluded the summarizing of equipment and results of the 1957 NATIONAL at DuBois, Pa. with the following paragraph:

(Continued on Page Twelve)

NEW

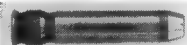
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National Championships

(Continued from Page Eleven)

"It seems to be quite clearly indicated that NO single item of equipment can be pointed to as **THE BEST**. It seems as clearly indicated that the skill of the individual competitor in both shooting and in the preparation of his rifle and leads is more important to winning than is the use of any particular brand of equipment."

I see no reason for changing that paragraph a bit to conclude this summary of the 1959 NATIONAL.

P. H. T.

LETTERS

NOT NECESSARILY TRUE:

Dear Mr. Teachout:

It is always refreshing to read a fine article such as that one by Harvey Donaldson. The "Old Pro" has probably forgotten more than most of us young upstarts will ever learn. I have noticed that quite often some of Mr. Donaldson's findings are different to those that are accepted. I have often found through experience that generally accepted theories do not always pan out. Some are quite unexplainable.

One, for instance, is the theory that I accepted for a long time, that a bullet would blow up far too soon on game if it was designed for blow-up varmint shooting. I found that this is not true. Not once, but several times, I've shot through deer, cutting ribs on both sides, with loads that failed to shoot through a jack rabbit. Two different bullets tested proved this in two rifles. One bullet was the standard 50 gr. Hornady .224" Spire Point; the other was the Sisk Neidner .224". The two rifles were a .222 Remington and a .22-250. Both were loaded with near maximum loads. If memory serves me, the loads were 20.5 grs. 4198 in the .222, and 33 grs. 3031 in the .22-250. Twelve deer were killed during this experiment.

Sincerely,

Harold Harton
Lampasas, Texas

LONG RUN OF 1000 YARD BULLS

Dear Phil:

Mr. D. C. Reilly in his report of the Forbes Long Range Match on page 6 of the September issue calls Creighton Audette "The 1000 yard New York State record holder and money winner in every long range tournament fired at Karner since 1959."

I wonder whether he is claiming the New York State record for Audette or only the record since 1939. I wonder also whether he has beaten the record made by me in 1938 at Peekskill. I have the signed score card, also witnessed and signed by H. M. Pope. Also have the practice card.

The course was 20 shots, any sights, and to continue till getting lower than a 5. The score was 100 plus 79 bulls, or 99 bulls for record. Actually there were 2 sighters, also 5's, and a re-entry target for practice scoring five 5's immediately preceding the match score. Therefore there were 106 bulls in succession, though the record can claim only 99.

I'm interested to learn whether you have heard anything nationally to exceed the above record.

Sam Tekulsky
Brooklyn, New York

DERMOT C. REILLY'S COMMENT

I don't know of Sam Tekulsky's 1000 yard score on the old "C" target having

been beaten in New York State, Perry, Bisley or anywhere else. If our N. R. A. and the British N. R. A. have no record of it having been bettered it probably is a world record. If inquiries, which I intend to make forthwith, are productive of negative results I will suggest that Forbes Rifle Club and our New York State Rifle and Pistol Association recognize Sam Tekulsky's score as the record before the adoption of the V-ring 1000 yard target.

To answer Sam Tekulsky's question categorically; we claimed Creighton Audette's score of 100-16V as a record for New York State on the V-ring target, with V-ring count. It would have been more concise if I had added the words "on the present target" after the word "holder" in the Forbes Tournament report, but I think the meaning was clear.

The N. R. A. does not attempt to keep state records and no one has heretofore questioned our announced recognition of Audette's score in P. S. a couple of years ago or my repeated designation of him as the New York State 100 yard record holder. This was not, and is not, inconsistent with Sam Tekulsky's legitimate claim to be the 1000 yard record holder on the old "C" target.

Incidentally, it was scores with long runs of bulls which evoked V-rings (a mistake in my opinion; the numerical count should have been made more difficult and then we wouldn't have the am-molies where a good shooter out-vee's or out-ex's the field by a 30% margin and finishes way down the ranking list).

Dermot C. Reilly

RE "STRANGE RIFLE BEHAVIOR"

Dear Phil:

With reference to Creighton Audette's article with respect to the smaller groups at 200 yards than at 100; if he will get a copy of the British Textbook of Small Arms and check the exact reference he will find in the Transactions of the Royal Society of London a very thorough mathematical dissertation on this subject in which they attempt to explain the results of firing through screens at various distances with similar results. As I recall the explanation given, with targets to illustrate, indicated when the bullet was stable in flight the maximum accuracy was obtained. This might appear at an intermediate distance rather than closer to the muzzle.

In addition the barrel vibration has a supplementary effect, so that for instance the SMLE rifle (a British military rifle) is reported to be the most accurate at 500 yards because of the combination of bullet stability and the compensation for various minor variations in bullet velocity, due to the believed fact that the muzzle is highest in its vibration when the bullet velocity is lowest and vice versa. If Mr. Audette will reduce the charges he is using I feel that he will get much smaller groups at 100 yards than at 200 yards.

My .270 Ackly Magnum does the same thing, only the groups are about double the size at 100 yards than they are at 300 yards and about equal to 400 yard groups when full charges are used (long range woodchuck loads). The groups in this rifle can be brought down to normal size merely by dropping the powder charge.

George Bjornstad
Chicago, Ill.

(Editor's comment: Both Mr. Audette and myself are aware of the things Mr. Bjornstad mentioned. Dr. Mann's theory

of Spiraling Bullets offers another possible explanation. However, in practical shooting this type of rifle ammo behavior is the unusual and not what may generally be expected.

Since the rifle-ammo combination Mr. Audette reported results from is strictly for hunting use, it would seem that the combination was giving very desirable results for the use it is intended. If I had such a combination that would give dependable similar results, I sure wouldn't change a thing.

If you will check Mr. Audette's report (page 3, Oct. 1959), you will note that his first three shots from a cold barrel, fired prone at 200 yards, made a very good normal 200 yard group, and the following seven shots made a tiny group within the boundary of the first three shots. You will further note that in his subsequent tests he fired his 100 yard groups first, with a cooled barrel, and immediately after fired his 200 yard groups with a warmed barrel. Whether or not that may have had any bearing on the results he got I wouldn't even guess at until further tests might be made in which the 200 yard groups were fired with a cooled barrel and the 100 yard groups with a warmed barrel—loads and all other conditions being the same.)

BULLET MAKING KINK (Excerpt)

Dear Phil:

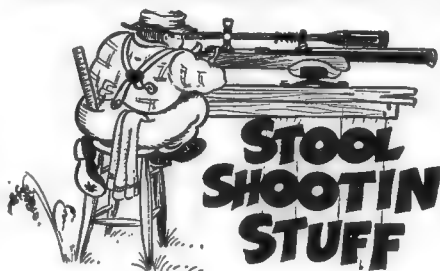
I have been reading with great interest your articles on bullet making, having sometime ago invested in a set of Bahler dies for my .280 Magnum (288" dia). I am very much in favor of these Bahler dies. I have other makes of dies in various calibers, some cheaper, some more expensive. The .288 bullets in 140 grs. have been giving under one inch groups at 100 yds. consistently from the hunting rifles I made my customers. I have not gotten around to trying them in my Bull Gun to date.

Like everyone (I suspect) who makes bullets at home, I too had wrinkled ogives. Tried all sorts of lubricants. Our local Centrix Bullet factory gave me several types to try, but give just a little too much and there were wrinkles, too little and a stuck bullet. Last week I had to produce a batch for the boys who were lucky enough to get antelope permits, and hit on a little trick that gave me only five wrinkled bullets out of 500. I wiped the ogive portion as near clean of all lube with paper kitchen towels—presto—no wrinkles, and very easy ejection, not a stick up in the whole batch, and the ogives are polished very bright.

John C. J. Knott
Tucson, Arizona

THE WYOMING RIFLE ASSOCIATION Gallery Committee has put out a "Pre-Season Gallery Bulletin" containing nine mimeographed pages of promotional material for both present and prospective clubs. It is a good piece of work. Francis B. Current, 1216 Fetterman Drive, Laramie, Wyoming is chairman of the Gallery Committee.

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BENCH REST MATCH RESULTS PLAINFIELD, NEW HAMPSHIRE

An unusual small entry of 13 fired in the September 27th registered shoot at Plainfield, N. H., but they did some excellent shooting and had some very keen competition. Ten of the thirteen shooters placed in the prize list one or more times. The high aggregates were:

	100 yd.	200 yd	NMC
Robert Stinehour	.428	.455	.441
W. J. Purcell	.472	.526	.499
A. K. Glendenning	.461	.584	.522
Howard E. King	.461	.585	.523
Crawford H. Hollidge	.490	.563	.526

Bob Stinehour was shooting his first match with a B&L 8-24 scope with custom mounts designed and made by Homer Culver of Silver Springs, Md. and his .441 NMC agg. was the smallest he has ever fired. He is quite enthusiastic about this combination of scope and mounts.

Bill Purcell, who has had a heap of fun gunsmithing his own rifle and tuning it to make it shoot, had the satisfaction of shooting his best NMC agg. to date, and a very good one, too.

IOWA FALLS, IOWA

Nine competed in the Oct. 3 and 4 registered shoot at Iowa Falls, Iowa. All fired the 100 yard matches for unrestricted bench rest rifle but only six fired the 200 yard matches and five completed the NMC agg. Vivian Duncan from Lancaster, Wis. won the 100 yd. agg. with .460, the 200 yd. with .587 and the NMC agg. with .523. Joe Dunnington, also from Lancaster, was 2nd at 100

(Continued on Page Fourteen)

TO THE ACCURACY SHOOTER

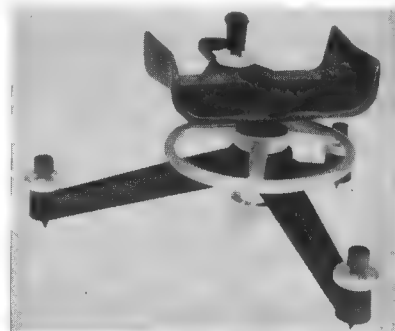
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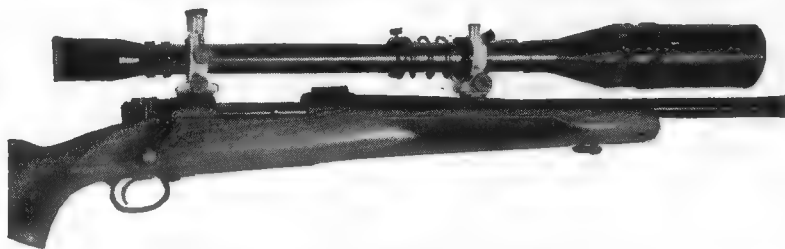
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Bench Rest Match Results

(Continued from Page Thirteen)

yds. with .576, 3rd at 200 with .722 and
2nd in the NMC with .649. Willard
Lange, Dows, Iowa was 3rd at 100 yds.
with .616, 2nd at 200 with .692 and 3rd in
NMC with .654. John Anderson, Fair-
view, S. D. disqualified in one 100 yd.
match with his other four groups going
.459, .471, .473 and .324 and then fired 4th
ranking .759 at 200 yards.

Beryl Sheldon of Iowa Falls won the
five 5-shot aggregate at 100 yds. with
heavy varmint rifle with .378 and then
fired a .832 agg. at 200 yds. for 2nd spot
in the two range agg. with .605. Erwin
Wyatt from Kasson, Minn. was 2nd at
100 yds. with .487, won the 200 yd. with a
.544 and the two range agg. with a .515
MOA ave. Vivian Duncan was 3rd at
200 yds. (.631) and the two range agg.
with .606. Selmar Larsgaard, Canton,
S. D. was 3rd at 100 with .566.

Otto Filbrandt won the Sporter two
range agg. with .982 MOA, averaging
1.116 at 100 yds. and .848 at 200 yds.

ST. LOUIS, MISSOURI

At the final match of the season for
the Bench Rest Rifle Club of St. Louis,
Sept. 13th, there were ten shooters.
Matches were fired at 100 and 200 yds. for
a two range aggregate with heavy var-
mint rifles, light varmint rifles and hunt-
ing rifles.

Wm. Schellert won the heavy var-
mint rifle agg. with .659 MOA, Marlin
Gray 2nd with .951 and A. M. Freund 3rd
with .970.

Jim White won the light Varmint
agg. with .908, the only under minute of

angle agg. fired. Leo Fieser shot a .787
MOA agg. at 200 yds. but he had 1.535 at
100 yds.

Marlin Gray won the hunting rifle
agg. with 1.237 MOA and Jim Ernst had
a 1.525 agg.

WICHITA, KANSAS

Eleven fired the National Match
Course in a night shoot at Wichita, Oct.
3rd, on a windy, rainy night. The high
aggregates were:

	100 yd.	200 yd.	NMC
L. F. Carden	.480	.521	.500
Dixon E. Herman	.478	.561	.519
J. W. Mayer	.454	.608	.531
H. G. Baucher	.489	.577	.533

Sixth ranking Bill Starks from Dodge
City had smallest 100 yd. agg. of .384 and
seventh ranking Larry Englbrecht, Wich-
ita, had second 200 yd. agg. of .543.

Dixon Herman from Omaha, Ne-
braska, appears to be taking over where
his late father, George Herman, had to
leave off.

"Red" Cornelison from Seminole,
Okla. shot a Varmint rifle and made a
NMC aggregate of .705.

DRYDEN, NEW YORK

Ten shot heavy Varmint rifles and
four shot light Varmint rifles in the last
of four shoots this season sponsored by
the Dryden Fish and Game Club. Both
classes fired five 5-shot matches at each
100 and 200 yards for a two range aggre-
gate (the newly adopted National Match
Course for varmint and sporter rifles).

The top five shooters in the heavy
Varmint class were:

	100 yds.	200 yds.	Grand
A. K. Glendening	.472	.538	.505
Ray Wilson	.457	.595	.526
Henry Stillman	.836	.769	.802
Ed Shilen	.678	.974	.826
Ross Sherman	.759	.900	.829

Light Varmint Class

	100 yds.	200 yds.	Grand
J. C. Palmer	1.001	1.006	1.003
Lumen Searle	1.105	.950	1.027

This club plans to install a moving
backer mechanism so that they may hold
registered Varmint Rifle class matches
next season. The new Secretary of the
Club, with whom contacts should be made
for next season's matches, is Russell E.
Cuatt, 113 Park Street, Ithaca, New York.

SOME HANDLOADING NOTES

Phil Teachout

A little "case History" of some re-
cent personal experiences in reloading for
the .308 Winchester cartridge may serve
to illustrate for the beginner hand loader
some of the variables that may be en-
countered in reloading any caliber and,
also, the undesirability of "jumping to
conclusions."

When I received my Savage model
110MCL rifle in .308 caliber, late last
winter, I had on hand 30 Franford Ar-
senal .308 match cases, which had all
been fired more than once and had been
full length resized before using in the
Savage rifle. I used only these 30 cases
for my loading and shooting during the
early part of the summer. During this
early summer period I used Lyman dies,
which only neck-sized the cases, in a
Johnson "Red-Head" press for my re-
loading the .308, that being the equipment
I had on hand at that time.

The bullets used in all the loading to
be mentioned were home-made, soft-
swaged by the E. U. system, in Bahler
Die Shop dies, in Sierra jackets of 1.085"
length. Bullet weights for two lots were
148 gr. and 145 grs., this being a bullet
with quite long bullet-to-bore bearing
length with a deep hollow point.

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2. National Small Bore Championship, Camp Perry, Ohio, 1957, John Moschkau.
3. 300 Meter Aggregate score, Du Bois, Pa., 1957, Don Robbins.
4. First and Second places, 300 meters, Du Bois, Pa., 1957, Clair Taylor and Don Robbins.
5. National Match Course, Du Bois, Pa., 1957, 1st, 3rd, 6th, 7th places.
6. National Match 10-shot 100 yd. aggregate, Augusta, O. Al Creighton, .3105".
7. National Bench Rest Championship, Johnstown, New York, 1955, Sam Clark, Jr.
8. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1954, Sam Clark, Jr. Score, or Group, .5276"
9. 10 Shot 200 yard WORLD RECORD, Du Bois, Pa., 1956, H. L. Culver (Present record) Group size .4016"
10. 1000 Yard, Famous Wimbledon match, any sight, 1955, Camp Perry, O. Frank Conway.
11. 1000 Yard, Famous Wimbledon match, any sight, 1956, Camp Perry, O. Frank Conway.*
12. Newest National Match Course winner, Wichita, Kans., Sept. 28, 1957, H. W. Barton, official new record, .3729" M. A. average.

* First two-time winner in 57 years.

Other individual matches, too numerous to detail, were taken by Douglas ULTRARIFLED barrels, in 1953, 1954, 1955, 1956 and 1957, since the advent of our development of ULTRARIFLED barrels in 1953.

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All of the above barrels were barrels regularly used by the above shooters in setting these marks. They were not selected in advance by firing tests. All were regular PRODUCTION MADE BARRELS.

I submit the above as attesting to the fact that the ULTRARIFLED "button rifled" barrel is the finest PRODUCTION MADE barrel obtainable today, anywhere. Day after day, these barrels insure the attainment of finest accuracy for the customer, the least trouble, and the most profit for the dealer-gunsmith. In addition I feel that our trade policies, discounts, deliveries, prices, and our constant assurance of a high level of performance from all our barrels, large or small, provides an overall service not matched by any other Barrelmaker in the land.

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Both CCI No. 200 and Winchester No. 120 were used, without any marked difference in performance that I could determine.

I started loading with a cautious 40 grains of DuPont 3031 powder in the F. A. cases, this being the suggested low charge with 150 gr. bullets listed in the Lyman Handbook, and then increased the charge one grain at a time. The maximum charge listed in the Lyman Handbook for the 150 gr. bullet is 44 grs. 3031. When I reached a charge of 43 grs. 3031 I got a slight "stickyness" of extraction of fired cases, which was a clear indication of too heavy a powder charge, and I eased back to 42 grs. 3031 in this case in this rifle, which gave good accuracy without any evidence of too high pressure. This is where I "jumped to a conclusion" which later proved to be wrong.

Since the acceptable charge of 3031 powder in this F. A. case was a full two grains under "Look" maximum charge for 150 gr. bullets, and since the bullet body bearing length of this 148 gr. bullet was longer than for the normal 150 gr. bullet, I "guessed" that the longer bullet bearing was causing a greater friction resistance in the barrel and thereby creating a higher pressure from a given powder charge. I therefore "guessed" that not much over max. charges for 180 gr. bullets should be my basic loading standard for loads with my home-made bullets in other .30 caliber cartridges I load. While my "guessing" was later found to be wrong, it was a guess well on the safe side, and it worked OK when applied to working up loads with other powders.

About mid-summer, while doing some shooting on our club 100 yard range, another member of our club show-

ed up to do some check shooting with a .243 Win. caliber rifle, and when he had finished, he donated his 10 fired .243 cases. At the time I expected to give the cases to someone else who had a .243 cal. rifle. A bit later I thought "why not make .308 cases from them?", since the .243 is one of the .308 Win. case family and has essentially the same case body dimensions.

By that time I had secured a set of CH loading dies for my RCBS A2 press, so I sized the .243 cases, expanded the necks to .30 cal. and trimmed the necks to proper length. I then loaded the cases with 90 grs. 3031, seated the bullets shallow, to get final seating from barrel bore resistance when closing the bolt (this to assure proper headspacing). Naturally, the brass in the neck walls was a trifle on the thin side but with full length sizing it was ample to hold bullets friction tight. The resulting cases worked OK and, with the same loads, there was no marked noticeable difference in performance between these and the loads in the F. A. cases.

A few weeks ago a member of our annual deer hunting party, who had purchased a Savage Model 99 Featherweight .308 cal. since last deer season, brought me a box of 20 empty Winchester Super-Speed cases to be reloaded. This friend doesn't do any great amount of between season shooting (a normal deer hunter) and his Lyman 4X scope was sighted for factory 150 gr. bullet loads. I suggested that he bring me his rifle and I would try to fit a load to his factory load sighting. He did that.

I first loaded five of his cases with the load I was then using in my own .308-43 grs. 4064 and my home-made 145

(Continued on Page Sixteen)

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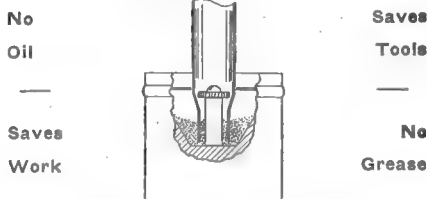
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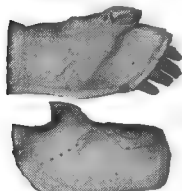
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Some Handloading Notes

(Continued from Page Fifteen)

gr. bullets. This load printed 7 inches low from his sight setting at 100 yards.

To make sure that his sights were correct for the factory loads, I purchased my first box of factory .308 cartridges—Remington Hi-Speed with 150 gr. CORE-LOKT bullet. One shot with the factory load assured me that his sights were correct for the factory 150 gr. bullet load. I had some .30 cal. 150 gr. Hornady round nose bullets on hand and loaded some of 44 grs. 3031 powder. When fired, this load proved to have exactly the same point of impact at 100 yards as the 150 grain factory load, so, "Shorty" was fixed up with a reload at no great bother.

The above experience needed me into doing some more investigations and experimenting with my own cases, bullets and rifle. The 44 gr. charge of 3031 in the Winchester SuperSpeed cases came just to the base of the case neck, as poured into the case, giving nearly 100% loading density but without any powder compression. I first tried the 44 gr. charge in the Rem. cases I had converted from .243 caliber. The powder came up into the neck of the case and would have been compressed if a bullet had been seated. A 43 gr. charge of 3031 in this case gave approximately the same loading density (from visual inspection) as the 44 gr. charge in the Win. cases. I then again tried the 43 gr. charge in the Franford Arsenal cases. That charge came up into the neck of the case and had to be reduced to the 42 grs. I had earlier standardized on to give what I considered a max. loading density that I wanted to use with 3031 powder. I now had on hand 100 new Western Super-X cases in .308 caliber and the 44 gr. charge of 3031 gave (visually) the same load density it had in the Win. SuperSpeed cases, which was what I had expected.

I then loaded some of the F. A. cases with 42 grs. 3031, some of the Rem. cases from .243 brass with 43 grs. and the Super-X cases with 44 grs. 3031, all with my 145 gr. home-made bullets and all with the same depth seating. On shooting, there was no marked difference in point of impact from the F. A. and Rem. cases with 42 and 43 gr. loads, but the 44 grs. in the Super-X cases did give a higher point of impact, which was approximately the same as the Rem. 150 gr. factory load. There was no evidence of any undue pressure from any of the loads and they all shot with good accuracy. I have home-made bullets for my 1959 deer hunting load.

In some further experimenting, I suspected, and the handbook confirmed, that 46 grs. 4064 powder would give about the same performance as the 44 grs. 3031 charge. In loading, the 46 gr. charge came up into the case neck just a bit, and probably is lightly compressed when the bullet is seated—this in Super-X cases. When shot, this load gave the same point of impact as the 44 grs. 3031 load which, from former experience with other cartridges, was what I expected.

I have on hand some Ball powder (probably Hodgdon salvage, type unknown) which I have used for some .222 Rem. case loading. I got the yen to try some of this powder in the .308. The only guidance I had on this was a "Pet Load" given in the Lyman handbook (47 grs.) and what little experience I had had in loading the powder in the .222 case. To be on the fairly safe side I cut the charge to 46 grs.—with my 145 gr. home-made bullets and same seating depth as other loads.

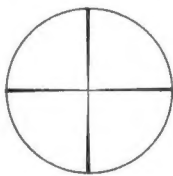
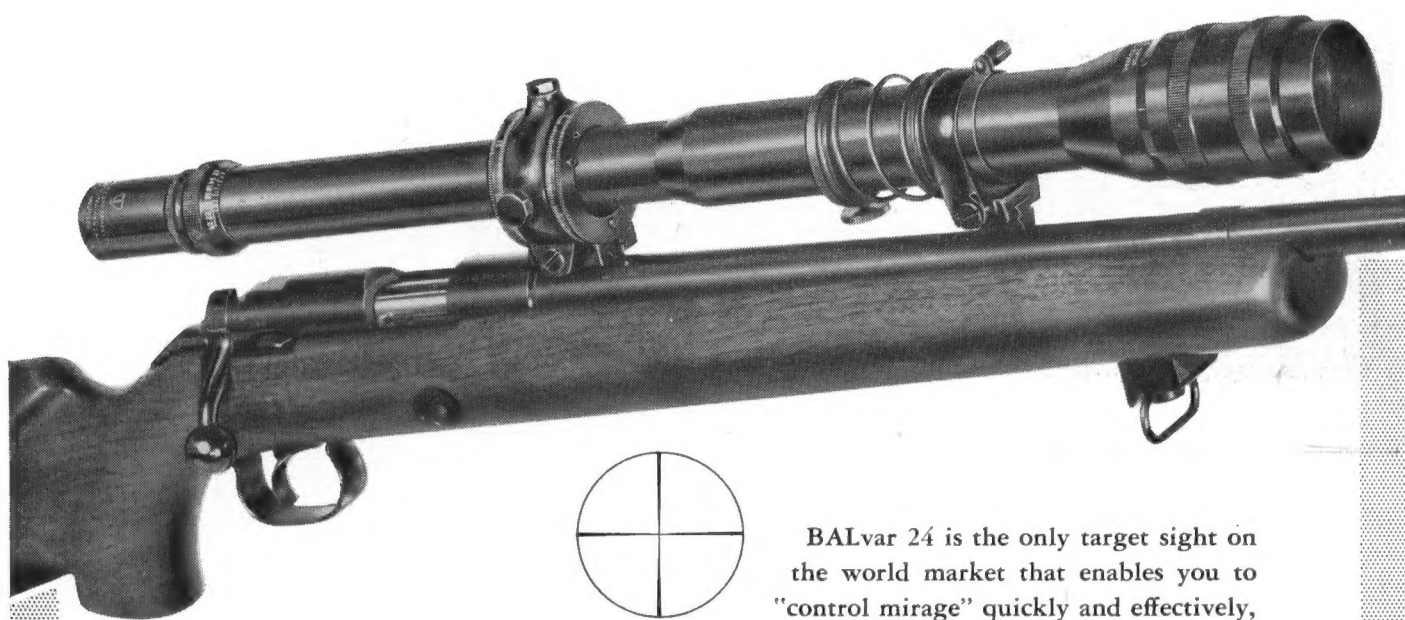
This Ball powder load gave me a bit of a surprise. I had check fired five of the 46 gr. 4064 loads on a Remington "Sighting-In" chart, aiming on the white X-ring with the 4X Bear Cub scope and had grouped in the 9 and 10 ring at 1 o'clock. Not loitering to change targets, I shot five of the Ball powder load, aiming at 6 o'clock on the 6" black bulls-eye and expecting, from prior experience with this powder, to group at or below point of aim. I was surprised, indeed, when this load started to impact a full four inches high, and going right into the group I had just previously fired with the 4064 powder load. The composite group was 1.814" with one wide shot from each load cutting into each other in the 8 ring at 1 o'clock, the other eight shots going into 1.15". These loads were in Remington .308 cases. Primers were flattened a bit more than in other handloads but not appreciably more than with factory loads, no cratering of the primer indent and no trace of hard extraction. That charge would probably act milder if loaded in the Super-X cases, but, in the Remington cases, with this particular lot of Ball powder, in my rifle, this appeared to be a safe and effective 150 gr. bullet load for cool weather—temperature was between 35 and 40 when I did the firing and I would certainly reduce that load at least one grain for first firing in mid-summer temperatures.

All the foregoing is such old stuff to long experienced handloaders that they will probably not have bothered to read this far, but, if it does serve to point out to less experienced handloaders some of the variables that should be taken into consideration when handloading any cartridge, the writing will have been worthwhile.

Incidentally, of that one box of Remington factory ammunition I fired one 9-shot group at 100 yards and one 10-shot group at 200 yards, both of which were at least 50% larger than biggest groups I get with my handloaded ammo with home-made bullets. That statement is not intended to "knock" Remington or any other factory loaded ammunition—factory ammo is a good, reliable product that will operate in any standard gun and give accuracy adequate for normal, general hunting purposes. However, I am quite convinced that with some study, beginning caution and care, and the continued exercise of common-sense, any normal person can learn to handload rifle ammunition that, in his particular rifle, will give accuracy superior to the general run of factory loaded ammo.

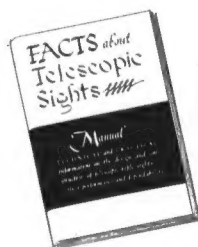
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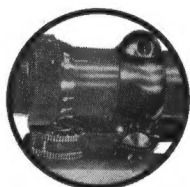
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The Tournament Circuit

(Continued from Page Nine)

the Union County Rifle League (Dewar course, we believe) were: Ransford D. Triggs 400-29, L. Larson 400-28, Fred Triggs 400-24, W. Arnold 399-30, and E. Donaldson 399-25. Thirty-nine competed in the match, Sept. 20th, on the Union County Park Rifle Range.

High scorers in the Victory Match of the Roseland Rifle League (an evening league) for the Dewar course were: nine competed in the match, Seemfwe Ransford D. Triggs 400-34, Fred Triggs 400-33, Arthur C. Battisto 400-32, Jack O'Hare 400-32, J. Holman 400-29, J. VanSickle, Sr. 400-28, J. VanSickle, Jr. 400-27, Winne Carr 400-26. Twenty-eight competed in the match, October 11th, on the P. J. O'Hare Range in Roseland.

HARVEY DONALDSON WRITES

Dear Phil:

It is about time I wrote you another letter so here goes. Have just been thinking and wondering why so many shooters have passed up about the best all around cartridge that has ever been offered the American shooters. Time was when you could buy either a Winchester or Remington for this caliber, but no more. After using a number of rifles in this caliber with best results both in hunting and my search for accuracy, I'm at a loss to understand just why so many shooters have passed up the use of the rifle chambered for the 7 X 57 cartridge, as it is called abroad.

This case was designed originally for a military cartridge. It was about the first of the really successful designs for use with smokeless powder, and brought out for use in the 1893 model Mauser rifle. And, make no mistake about it, this case is today better than ever with modern components. The early experimenting with this case was carried on in Germany and they had several weights of very accurate bullets for it. The English were quick to catch on, and the rifle was used by some of the most expert English big game hunters, who used it with complete success on elephants in Africa. I believe they used what they called the 175 grain solids (full metal patch) for this work.

I had a friend who went to Alaska with the first gold rush in 1896, and along after the War of 1898 he managed to get hold of a 7 m/m Spanish Mauser, together with the German hunting ammunition having 175 grain bullets. He wrote that he was able to kill ANYTHING that Alaska had to offer, with his pea shooter, as some of his friends called it. Later this sour-dough loaded his own ammunition.

I consider the design of this case to be perfection, and down through the years it has proven to be one of the best military and hunting cartridges ever developed. If there is such a thing as an all around cartridge, this is IT. The case has the ideal capacity for the .276 bore, thus it is more efficient than such cases as the .20-06 and the .270, that came along later. Also the recoil is light, compared to these other rifles, which will appeal to many shooters, today. We now have many fine bullets in all weights from 110 grain up to 195 grain available in 7 m/m caliber, so the hand loader can prepare his ammunition for the work at hand, and obtain accuracy second to none.

Down through the years I have worn out several .30-06 Springfields, and

NEVER have I had one that could compare with a good rifle shooting the 7 m/m case, in regard to accuracy. Same is true with the .270 Winchester. The 7 m/m gives better accuracy.

To give you some idea as to the efficiency of this medium sized case, let's look at the record. The hand books will show you that it takes 56 grains of 4350 with the 140 grain bullet to give a velocity of 3000 Ft. seconds in the .270 Winchester rifle. With the 7 m/m rifle we find that a load of only 46 grains of 4064 (ten grains LESS) will with the 139 grain bullet give this same 3000 ft. sec. velocity. The same holds true with all bullets available for this 7 m/m rifle. One gets results all out of proportion to charges used.

After considerable experimenting with several rifles in this caliber I have arrived at the conclusion that a twist of twelve inches with only a four groove barrel gives the best in the way of accuracy and all around performance. Not only is the accuracy better but more velocity with less pressure is in this way obtained. This 12" twist will stabilize the 175 grain bullet, far and beyond any range at which a hunting rifle may be used. With this twist the lighter bullets give bench rest accuracy. Sierra makes bullets in this caliber of several weights, and the Hornady bullets in 120, 139, 154 and 175 grain leave little to be desired.

The case itself is a hand loaders dream, one that a lot of fellows have looked for in vain. The best loads will fill the case up to the base of the bullet (that is, for hunting loads) and for my money this is an ideal condition. Reduced loads will of course have more air space.

When you get through playing with the .308 Winchester you have been telling me about, have Douglas take off the barrel and replace it with one in 7 m/m. Mister, you will NEVER regret it. I have just discarded a .308 Win. light-weight M70, after some two years of testing, and am back with my FIRST big game rifle, the 7 X 57 Mauser. After reading the above data, I'm afraid you are going to get the idea I'm a booster for this fine old cartridge.

If you can get over this way before the snow comes I'll be glad to show you just what may be expected from most any 7 m/m rifle, as to the accuracy, on the Pine Tree Range.

It is cool here in the Mohawk Valley tonight, a heavy frost. This will take the leaves off soon, and I'll be getting out my heavy hunting shirts in time for the coming deer season. Got a place all picked out where I can do some still hunting.

Sincerely,

Harve

STATE SHOOTING RECORDS for rifle and handgun courses have not, to the best of our knowledge, ever been published in a national periodical in the past. Precision SHOOTING is interested in co-operating with State Rifle and Pistol Associations to supply this service. Write for details.

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FOR SALE: One Outdated State Championship NBRSA Trophy. Unused, Unseen, Unawarded and apparently Unobtainable. Won October 1958. Repeat 1958. For details contact George B. Morton, Marion Hill, Richmond, Virginia.

HANDGUN LOAD "QUESTION AND ANSWER"

Question: What make of .357 cartridges are best? Which case is best for hot Harvey Jugular bullet loads? H. Stogner, California.

Answer: From the date Winchester discontinued this caliber under their label until recently, I preferred Super-X ammo, and the full length cases they used. The ammo was considerably more powerful than other makes. Current lots of Remington ammo, that has changed to the Small Rifle primer, is at least equal, and perhaps has a slight accuracy and uniformity advantage, depending on the lot number. Remington cases are now full length. (No doubt Peters make is identical, but I have not tested it.)

Remington and Super-X cases now give practically identical ballistics. Remington's change to the Small Rifle primer was all for the best. I have not extensively tested these with heavy handloads of 2400, and I advise working up charges with caution, and firing them in heavy spring revolvers. The primers may give excessive ignition with less than top loads, or higher pressure with top loads. While 2400 is not very flexible, it is much less critical than military salvage .30 Carbine ball type powders, that can get even experienced reloaders in trouble, especially with assorted lots and ages.

Super-X and Remington cases both work very well with CCI Small Pistol primers, that give excellent ignition with either very mild target charges or extremely heavy hunting loads, or anything in between. They also give fast, perfect ignition in heavy spring guns or tuned-up target-grade revolvers. It is not necessary to use Rifle primers for handguns, with the CCI make for pistols.

Kent Bellah

Split Neck Cases

(Continued from Page Seven)

future I shall have tongue-in-cheek when anyone uses "split neck case" as an alibi for a wide shot in a group—an alibi that I have frequently heard in the past.

However, I do not consider that there is yet evidence enough to draw any general conclusion that split necks in cartridge cases, alone, never has any ill effect on accuracy. This is something that other shooters might test, and Precision SHOOTING would appreciate having reports of such tests for publication.

P. H. T.

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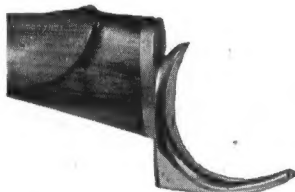
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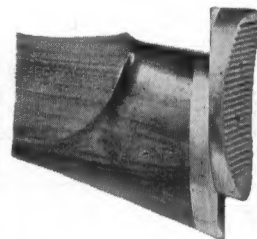
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	45 gr. Semi-pointed...	3.05
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	50 gr. Spitzer.....	3.05
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	55 gr. Spitzer.....	3.05
	63 gr. Semi-pointed...	3.05


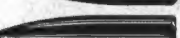
.22 CALIBER .224 Diameter Bench Rest

	53 gr. Hollow Point...	3.75
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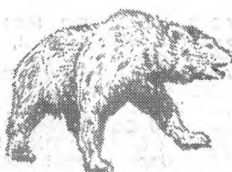
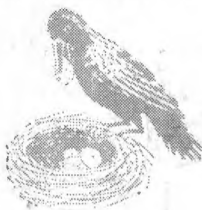
6 MM .243 Diameter

	60 gr. Hollow Point...	3.65
	75 gr. Hollow Point...	4.00
	85 gr. Spitzer.....	4.15
	100 gr. Spitzer.....	4.40
	100 gr. Semi-pointed...	4.40

.25 CALIBER .257 Diameter

	75 gr. Hollow Point...	4.00
	87 gr. Spitzer.....	4.15
	100 gr. Spitzer.....	4.40
	117 gr. Spitzer Boat Tail	4.65
	117 gr. Spitzer Flat Base	4.65






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6.5 MM .264 Diameter

	120 gr. Spitzer.....	4.65
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.270 CALIBER .277 Diameter

	90 gr. Hollow Point...	4.45
	110 gr. Spitzer.....	4.65
	130 gr. Spitzer Boat Tail	5.00
	130 gr. Spitzer Flat Base	5.00
	150 gr. Spitzer Boat Tail	5.25






7 MM .284 Diameter

	120 gr. Spitzer.....	4.65
	140 gr. Spitzer.....	5.00
	160 gr. Spitzer Boat Tail	5.25



30 - 30

	150 gr. Flat Nose.....	5.00
	170 gr. Flat Nose.....	5.25

.30 CALIBER .308 Diameter

	110 gr. Hollow Point...	4.55
	125 gr. Spitzer.....	4.65
	150 gr. Spitzer.....	5.00
	180 gr. Spitzer Boat Tail	5.25
	180 gr. Spitzer Flat Base	5.25



.30 CALIBER Competition

	180 gr. Matchking....	5.50
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.303 CALIBER .311 Diameter

	150 gr. Spitzer.....	5.10
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8 MM .323 Diameter

	150 gr. Spitzer.....	5.10
	175 gr. Spitzer.....	5.35

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